

1 IN THE UNITED STATES DISTRICT COURT

2 FOR THE DISTRICT OF ARIZONA

3 Barry Lee Jones,) 4:01-cv-00592-TMB
4)
5 Petitioner,)
6)
7 vs.)
8) Tucson, Arizona
9 Charles L. Ryan, et al.,) November 1, 2017
10)
11 Respondents.)
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13 _____)
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BEFORE THE HONORABLE TIMOTHY M. BURGESS, DISTRICT JUDGE

Transcript of Proceedings
Evidentiary Hearing - Day 3

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UNITED STATES DISTRICT COURT

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1 (On the record at 9:23 a.m.)

2 THE COURT: All right. How is everybody doing this
3 morning?

4 Don't answer all at once.

5 MR. SANDMAN: I didn't hear you.

6 THE COURT: Are you doing well?

7 MR. SANDMAN: Yes, great.

8 THE COURT: Good. Good.

9 We've got our technical difficulties worked out? So far,
10 so good? Knock on wood?

11 How are we doing? What's the game plan for today?

12 MR. SANDMAN: Your Honor, we have Dr. Ophoven here,
13 ready to go. When she's done, we have Paul Gruen, who is the
14 scene reconstructionist. Then we have Dr. Pat Hannon, who is
15 the biomechanics. We think it will take all day to get through
16 those three.

17 THE COURT: Perfect. We can talk, I guess, toward the
18 end of the day about how you see things unfolding based upon
19 how far we get today.

20 MR. SANDMAN: Thank you, Judge.

21 THE COURT: Sounds good. Do you want to call your
22 first witness?

23 MS. SMITH: Your Honor, we call Dr. Janice Ophoven.

24 THE COURT: Doctor, hi. Come on forward.

25 THE CLERK: If you would please step into the witness

1 stand and remain standing to be sworn.

2 **JANICE OPHOVEN, M.D., WITNESS, SWORN**

3 DIRECT EXAMINATION

4 BY MS. SMITH:

5 Q. Could you please state your name for the record.

6 A. My name is Janice Ophoven. O-p-h-o-v-e-n.

7 Q. Thank you. Thanks for being here today, Dr. Ophoven.

8 A. My pleasure.

9 Q. Dr. Ophoven, how are you currently employed?

10 A. I own a private practice, consulting practice, in forensic
11 pathology.

12 Q. Could you tell us a little bit about your educational
13 background?

14 A. Sure. My background is medical school, graduating '71.
15 Decision to be a pediatrician. Did a year of pediatrics. Then
16 my husband and I both got a chance to spend two years in
17 Missouri during the Vietnam War while Tom was a flight surgeon,
18 and I practiced there. Returned to complete my pediatrics, and
19 then applied for a combined program between pediatrics and
20 pathology, with the ultimate goal of becoming a pediatric
21 pathologist. Did a combined program so that I was eligible for
22 both boards, and then went on to do a pediatric pathology
23 fellowship at the Children's Hospital.

24 And then appreciating that a lot of what was hurting and
25 killing children, I decided to focus my career on

1 understanding, teaching, and helping to potentially prevent
2 injuries in children, and did a forensic pathology fellowship
3 intending to apply those principles to understanding injuries
4 in kids.

5 I completed all that in nine years after medical school and
6 entered the world in 1980.

7 Q. Are you board certified in any areas?

8 A. I am board certified in anatomic pathology and forensic
9 pathology.

10 Q. Great. Could you just give us a very brief overview of
11 your career history after your fellowships?

12 A. Sure. Briefly, I did about 10 years at the Children's
13 Hospital, associate director and then director of the
14 laboratories, worked on helping the hospital build their child
15 abuse program.

16 THE COURT: That was where?

17 THE WITNESS: At the Children's Hospital in Saint
18 Paul, Minnesota. Consulting on abuse cases while I ran the
19 lab. We performed all of the autopsies there, between 50 and
20 70 a year for nearly 10 years. Majority of the kids were less
21 than five. Working with local law enforcement, teaching and
22 helping with the investigation of cases of abuse and neglect.

23 I left the children's hospital after about 10 years there
24 and have worked in a number of venues since then, continuing a
25 forensic pathology, pediatric forensic pathology consulting, as

1 well as working in other arenas so as to support my income.
2 Because you can't hang a shingle as a pediatric forensic
3 pathologist.

4 And then in 2001, returned to doing medical examiners work,
5 and worked for a number of offices in Minnesota, including the
6 geographically large medical examiner and coroner system in
7 northern Minnesota for many years. And in that role, between
8 2002 and 2010, was responsible for accepting jurisdiction,
9 going to scenes, working with police, testifying, performing
10 autopsies, signing death certificates.

11 And concurrent with that, continuing my consulting, my
12 pediatric forensic consulting has grown from local cases to
13 cases all over the U.S., including Canada and the UK and
14 Australia.

15 In 2007, the consultations from prosecutors dropped off,
16 because I had been doing increasing amounts of work for
17 reviewing defense cases, so that now the consulting that I do,
18 official consulting and sworn testimony, is for -- in criminal
19 cases for defendants.

20 THE COURT: Can I just ask you a question? Is that
21 just because of the demand, who's asking you to do it, as
22 opposed to some philosophical reason?

23 THE WITNESS: Well, there is no philosophical reason
24 on my part. I would be rendering the same opinions for
25 prosecutors, and they were very happy with me for many decades.

1 But I think there is a belief among some, especially the child
2 abuse field, that there is a loyalty that's required, so I am
3 not -- I haven't been consulted by folks from the prosecutors,
4 but there are many cases where I kind of wish they had.

5 Anyway, they don't call me anymore. But I've done lots and
6 lots of work for --

7 THE COURT: So you'll answer the phone, it's just not
8 ringing, is that what you're saying?

9 THE WITNESS: Yes.

10 MS. SMITH: Thank you, Dr. Ophoven.

11 BY MS. SMITH:

12 Q. Have you published in the field of pediatric and/or
13 forensic pathology?

14 A. Yes, I've done some case reports. And then over the years,
15 starting in 1992, I was -- have been asked by a number of book
16 publishers and editors to write the chapter on pediatric
17 forensic pathology. And so that was '92, '97, 2007, another in
18 2014, and so forth. So these were the -- and in '92, this was
19 the first time that pediatric forensic pathology was recognized
20 as part of pediatric pathology.

21 Q. If we could just take a quick look at Exhibit 108.

22 THE COURT: I'm sorry. That reminds me, before you do
23 display any exhibits, I am assuming we're going to go into some
24 of the sealed exhibits.

25 MS. SMITH: Yes.

1 THE COURT: We've got the same procedures set up and
2 ready to go?

3 MS. SMITH: Yes.

4 THE COURT: Madam Clerk, we will be turning off the
5 public displays.

6 THE CLERK: That's correct, Judge.

7 MS. SMITH: I will give her some warning.

8 BY MS. SMITH:

9 Q. Dr. Ophoven, is this a copy of your CV? Or at least the
10 first page?

11 A. Yes, it is. Current as of 2015, it looks like.

12 Q. Great. And that's in evidence as Exhibit 108.

13 Let's move on to your involvement in this case. Do you
14 remember when you were first contacted by the Federal Public
15 Defender's office?

16 A. I was first contacted in this case in May of 2002.

17 Q. Do you recall that you both signed a declaration and wrote
18 a report back in 2002?

19 A. Yes, I did.

20 Q. Can we take a look at Exhibit 103?

21 Dr. Ophoven, can you identify this document?

22 A. Yes, that's the declaration that I submitted after my
23 report was put into proper legal format.

24 Q. Can we take a look at Page 19.

25 Is this a copy of the report that you authored in 2002?

1 A. Yes, ma'am.

2 Q. We're not going to go line by line through this, but on
3 this page there's a list of materials that you reviewed prior
4 to authoring this report?

5 A. Yes, ma'am.

6 Q. Do those include some materials related to the case
7 investigation such as witness interviews?

8 A. Yes, ma'am.

9 Q. Did you also review the autopsy report authored by
10 Dr. Howard?

11 A. Yes.

12 Q. And some autopsy photographs?

13 A. Yes.

14 Q. And you received and reviewed tissue slides from the Pima
15 County Medical Examiner's Office?

16 A. Yes, I did.

17 Q. You have now written some more recent reports, is that
18 correct?

19 A. Yes, I have.

20 Q. All right. In April 2009, you authored another report
21 which is Exhibit 105. Can you just confirm this is your
22 report?

23 A. It is.

24 Q. I believe in that report you indicated that your intention
25 here was to provide a more succinct and updated summary of your

1 opinions.

2 A. Yes, ma'am.

3 Q. Can we take a look at Page 3 of Exhibit 105.

4 Could we expand the top portion of that large paragraph.

5 All right. Here, Dr. Ophoven, I believe you're talking
6 about Rachel's fatal abdominal injury, is that correct?

7 A. Yes, I am.

8 Q. You say that she died from a ruptured duodenum with
9 dehydration, shock, and eventually peritonitis?

10 A. Yes.

11 Q. You make a comment that to understand this injury it's
12 important to understand the anatomy.

13 A. Absolutely.

14 Q. Could you explain to us why that's important?

15 A. The part of anatomy that was most difficult to learn as a
16 medical student is understanding tissue planes and the
17 separation of tissues and organs based on natural tissue
18 separations that are formed.

19 In abdominal injuries, there are separate compartments
20 within the arena that we call the abdomen generically, and
21 those different parts, depending on where the injury is, will
22 reflect many differences in terms of how the injuries are
23 expressed, how they progress, and what the nature of the
24 complications are, and so forth.

25 So in order to understand this case specifically, it's

1 really important to understand the separation between the
2 peritoneum and the retroperitoneum or behind the peritoneum,
3 because that plays an important part in interpreting symptoms
4 and patterns of injury.

5 Q. I believe you've included a diagram in your photographic
6 atlas that can illustrate this.

7 Can we take a look at 107?

8 And this is a sealed exhibit. If we could turn off the
9 gallery monitors.

10 Dr. Ophoven, this is what you refer to as the photographic
11 atlas that you prepared in this case?

12 A. Yes, ma'am.

13 Q. Could we take a look at Page 7? Does this demonstrate what
14 you were just explaining to us about the different tissue
15 planes?

16 A. Yes.

17 Q. Could you just point out on the diagram what you're talking
18 about.

19 A. This is a diagram of the organs of the abdomen from the
20 side. Ideally, looking at it kind of from the left side of the
21 body. So you're looking at the liver on end, you're looking at
22 the stomach here on end, and then you're seeing here these
23 folds, there's lines that run like this. And also a line,
24 and --

25 THE WITNESS: How do you clear that now? What's the

1 clear button?

2 THE COURT: I am not sure.

3 THE WITNESS: I don't know. Sorry, I am not
4 mechanically adept.

5 THE COURT: If you can just hold on one moment.

6 (Pause in proceedings)

7 MS. SMITH: Thank you.

8 THE WITNESS: That's okay. The most important thing
9 here that I am wanting to show is that there is a line that
10 runs around the organs in the back. That's the
11 retroperitoneum. The duodenum, the part that got injured in
12 this case is that organ right there.

13 THE COURT: Is it in between those two layers?

14 THE WITNESS: Yes, it's between this layer here and
15 the back bone here. If there's an offending force that comes
16 from the front, you can see how this particular organ is going
17 to be squished between the front and the back right against the
18 hard bone, whereas these organs, here, here, here, here, are
19 not tacked down, so they can actually literally move out of the
20 way.

21 So if you get hit in the solar plexus, the thing that's
22 most at risk is your duodenum. Interestingly.

23 This is the place where the injury occurred from that
24 impact.

25 The other thing that's important about this is that when

1 the duodenum became injured, the inflammatory process was also
2 restricted to this tissue area in the retroperitoneum. So
3 instead of the inflammation being immediately developing out
4 into the abdominal cavity, the inflammation would be confined
5 to the retroperitoneum, where it will spread side to side, and
6 it will spread top to bottom but behind everything else.

7 So it spread the over to the adrenal glands, it spreads
8 over to the pancreas, but it stays protected from the
9 peritoneal cavity, this whole area here, until much later in
10 the process.

11 For that reason, the kind of symptoms that you typically
12 get from something happening in your abdomen, like an appendix,
13 you get lower abdominal pain with an appendix for two or three
14 days, and then if you ignore it you might develop a fever, and
15 then after three or four more days you might develop a serious
16 abdominal catastrophe.

17 That's because the peritoneum reacts as a whole, and that
18 inflammation spreads like crazy all over.

19 There is a delay between when this injury spreads into the
20 peritoneal cavity. That kind of delay historically, in the
21 medical literature, pediatric surgeons, emergency room
22 physicians all recognize that this can cause a significant
23 delay in the onset of symptoms that look really bad.

24 So delay in symptomology localization to the
25 retroperitoneum, this special space I am talking about really

1 plays an important role in how you interpret the autopsy
2 findings.

3 THE COURT: How would the -- you said that even before
4 it spread into the peritoneum it would -- it could migrate
5 laterally and horizontally.

6 THE WITNESS: That's correct. But it doesn't manifest
7 in the same kind of symptoms.

8 THE COURT: Right, so what symptoms would be man- --
9 how --

10 THE WITNESS: Discomfort. Just discomfort. Belly
11 ache. Maybe a little bit of nausea, or not. Change in
12 appetite. Depending on how extensively the spread is. But
13 they wouldn't feel good, but they would not necessarily look
14 like they were suffering from an impending catastrophe.

15 THE COURT: Does that result in commonly individuals
16 not knowing that they have a serious injury?

17 THE WITNESS: Absolutely. We've had cases of
18 children, as well as adults, not appearing to medical attention
19 until peritonitis becomes manifest, which may be three or four
20 days; until there's actually a catastrophic decompensation like
21 happened in this case, where there was the onset of peritonitis
22 and simultaneously shock.

23 In this case she suffered from the inability to keep up
24 with her fluid needs because of dehydration, so the dehydration
25 actually was a contributing factor to the shock. She didn't

1 have enough fluid to keep her blood pressure up. So the end
2 game, so to speak, in these things may be as short as two or
3 three hours, but the process may have been going on for three,
4 four, or perhaps even more days.

5 That's an important point given this location. If it had
6 been in the peritoneal cavity with leaking of blood into the
7 abdominal cavity or a hole in the ball that's in the abdominal
8 cavity, then you would expect symptoms to present themselves
9 much sooner.

10 Q. Can we just dig into that a little bit, distinguishing this
11 injury that Rachel suffered from an injury that maybe you
12 observed in your practice that presented differently?

13 A. Well, over the years, this being the second most common
14 cause of death in traumatic injuries associated -- or traumatic
15 injuries in childhood after head trauma, these cases can
16 present in a remarkably large spectrum. So I have had a case
17 where the child got a handlebar injury. While showing his
18 sisters how his new mountain bike could take a jump, the
19 handlebar hit an artery in his liver and he was in irreversible
20 shock within a half an hour. So even though he got to the
21 hospital within 10 minutes, they couldn't save him because he
22 had bled so rapidly from an artery. And there was, of course,
23 the autopsy is blood everywhere.

24 The other end of the extreme is a case that I had where
25 five years after the child had suffered a traumatic injury, the

1 inflammatory process eventually routed into an artery and he
2 bled into his GI tract five years later.

3 In some cases the children may have intermittent flu-like
4 symptoms until the bottom falls out from the breakage into
5 peritonitis. I've had cases last two, three weeks, where the
6 child has been symptomatic for that long, may have seen the
7 doctor even two or three times during that period. But it
8 isn't until they finally go into shock that people realize this
9 isn't the flu, and then it's too late. Shock is too late.

10 So you can go anywhere from just a couple of minutes to
11 literally weeks or more.

12 So the forensic pathologist is faced in these cases, first
13 of all, needing experience with these kinds of cases; and
14 secondly, recognizing what kind of information you need to
15 collect to figure out what was the sequence of events.

16 It's not hard to tell why someone has passed away if they
17 have peritonitis, and they knew that within a couple of seconds
18 with checking in her belly. The real question is how long had
19 that been there and what was the route. Where did it start,
20 how long would that have taken, and how does that match with
21 the -- what you see under the microscope and what you hear from
22 an investigation that begins with a notation of when was the
23 last time she was known to be well. That's when you start the
24 clock in these cases.

25 If you don't know the last time they were known to be well,

1 then you can only start with when they know that she wasn't
2 well, then you have an undiscovered period of time that it may
3 be not possible, except for just looking at the tissue, and
4 that's not as good as a good history.

5 Q. Just to confirm here, we don't see evidence of that
6 immediate bleeding type injury that you just --

7 A. No, there's no blood -- when you look at the autopsy
8 pictures, there's no fresh blood to the naked eye. These cases
9 are if they pass away before they get to the hospital, when you
10 open the belly, basically their abdomen is full of all the
11 blood they have, with clots, and it's just all over.

12 Q. We'll take a look at those photos in a minute.

13 You mentioned a moment ago that eventually Rachel went into
14 shock?

15 A. Yes.

16 Q. I wanted to pull up -- I believe it's Slide 29 in this
17 exhibit. This is, again, Exhibit 107.

18 I believe this is a slide that you prepared to help
19 explain --

20 A. Shock.

21 Q. -- the shock process.

22 A. Shock is a complex system of the body that requires
23 resistance to flow in order to maintain sufficient pressures to
24 move the blood all through the organs of the body.

25 So the blood comes out of the heart and into the arteries,

1 spreads out into these basically maps of blood that go down to
2 single-file red blood cells, accessing their own cells as they
3 go by, giving up oxygen, glucose, collecting the bad stuff, and
4 moving on back to the heart.

5 In order for this system to work, there has to be enough
6 fluid in the system, there has to be enough pressure so that
7 when the heart beats it moves the blood.

8 When shock develops for whatever reason -- I don't have
9 enough blood in there because I'm bleeding, I don't have enough
10 fluid in there because I've been dehydrated, or I have an
11 infection like peritonitis that bacteria releases toxins that
12 cause my ability to maintain blood pressure to be lost -- what
13 happens is this ability to move the blood through here is lost;
14 the blood goes into the capillaries and can't come back.

15 So no matter -- even if you're in irreversible shock, if
16 you put in an IV, you can fill them full of blood, the blood
17 doesn't go anywhere. It doesn't achieve access to the brain
18 and the heart and the other things it needs to do.

19 So irreversible shock basically means that this system
20 breaks down, circulation stops, and once you get into
21 irreversible shock you can't reconstitute it even if you have
22 people right there; they go into irreversible shock in the
23 hospital, you can't recover them.

24 With children, the period before irreversible shock can be
25 very short. So they may look okay, the blood pressure will go

1 up actually in the early stages, the heartbeat will go up, the
2 child will still be able to maintain interactiveness. I've
3 seen children sitting holding their bottle in the emergency
4 room while they're in shock, but they don't look very good.
5 And then as soon as that magic moment occurs, bottom falls out,
6 it's over.

7 So when we're talking about shock as a component of the
8 fatal process, we are talking about a very short time before.
9 Before that, depending on the nature of the symptoms, location
10 of the injury and the medical knowledge of the people
11 observing, you may or may not appreciate that a catastrophic
12 event is about to take place.

13 Q. Does the age of the victim in this case, that she was four
14 years old, does that affect her ability to communicate her
15 symptoms to the people around her potentially?

16 A. Well, obviously the answer is yes. A little one is simply
17 going to be reflecting symptoms. They're going to be typically
18 more quiet. They lose appetite. As you get closer to
19 irreversible shock, they will have unquenchable thirst. I
20 mean, they will want to drink and want to drink and want to
21 drink, but unfortunately if the problem in their belly makes
22 them throw up then it's a vicious cycle. They can't keep
23 enough down to keep their kidneys working and to keep the blood
24 pressure up. But until they lose consciousness with
25 irreversible shock, they may actually be talking. And walking.

1 I've seen them walk within a couple of hours of fatal shock
2 coming on.

3 Q. And you've mentioned dehydration as something you observed
4 in Rachel.

5 A. Yes. When we're looking at the different kinds of shock --
6 because that's important. Dehydration is a term we use for the
7 body not having enough water in the bloodstream to maintain
8 pressure. That means that the kidneys aren't getting enough
9 water to clear, kidney function starts to deteriorate.

10 Chemistries within the blood, we are required to bathe our
11 cells in the equivalent of sea water, and that sodium has to be
12 within a very narrow range, the potassium has to be within a
13 narrow range. And as shock develops, these things go -- or as
14 dehydration gets worse, the bathing of the cells and the
15 chemistry of the cells gets off.

16 Q. I'm going to interrupt you just for one moment.

17 Could we pull up Exhibit 105 again. This is your 2009
18 report, at Page 3.

19 I believe at the top here is some evidence of what you were
20 just discussing. We'll make it bigger for you. This is
21 describing -- I believe this is just repeating the vitreous
22 chemistries in the autopsy report?

23 A. Yes. The vitreous chemistries are critical in assessing
24 these cases. And one of the heart breaking things is often
25 that's not collected because the eyes are preserved for

1 something else. This is one of the most critical factors here.
2 That is did the vitreous chemistry, the material from the
3 eye -- which is the closest to what the body was at the time of
4 death for us to interpret -- how deranged were those
5 chemistries for us to get a sense of how significant the
6 dehydration was at the time that she passed.

7 And what we know here is the sodium is way higher than it
8 would be given the interval between when she died and the
9 collection. This is elevated, but we know from the potassium
10 that many hours had elapsed since she died and when the
11 autopsy. So this would have been much higher.

12 Chloride is extremely high. And the most important thing
13 here is the BUN and creatinine, or UN and creatinine, reflect
14 kidney function; has it been receiving enough fluid for the
15 kidneys to function properly, and the answer is no.

16 So she was in early kidney failure.

17 Q. What can you say about how that relates to the timing of
18 Rachel's injury and inflammatory process?

19 A. Well, this is a process -- and again this is the whole
20 thing in perspective. But this basically says this isn't a
21 sudden death, this is not something that happened within the
22 last few hours, 12 hours or so, just from this. This is a
23 derangement of body chemistries that takes considerable time
24 and is a reflection of the end stage presence of shock.

25 Q. Did you observe some other things that were evidence of the

1 dehydration?

2 A. Yes, there were actually multiple, multiple elements that
3 tell you she was severely dehydrated. Number one, she had
4 substantial physical features of dehydration. Her eyes were
5 sunken and her tissues were dry. And that is -- that is a
6 physical diagnosis 101 for pediatricians.

7 Number two, we have the vitreous changes that are pretty
8 diagnostic of dehydration. Number three, if you look at her
9 weight profile --

10 Q. If you could pause for a minute we can pull that up for
11 you.

12 This is Exhibit 103, which, again, is your 2002 report.
13 And attached to your report are some weight charts. Those are
14 on Pages 26.

15 Do you need that enlarged at all?

16 A. I don't. Do you want me to describe it?

17 Q. Yes, please.

18 A. This is a classic CDC prepared weight or growth chart for a
19 child this age. And what you can see, this is before -- this
20 is up to age three. What you can see and what you're seeing
21 here is a length pattern that is normal. Above normal for her.
22 So she was on the tall side. What you see here is a weight
23 pattern that continues along a predictable line.

24 So you're not supposed to be even Steven. You can be small
25 and tall, you can be short and thick. But she's following her

1 pattern, which suggests to me that there was nothing serious
2 enough, until she was three, to cause her any problems with her
3 growth.

4 Q. Can you just clarify what age range this growth chart
5 shows?

6 A. This only goes up to age three, 36 months.

7 Q. Can we take a look at Page 25. What do we see here?

8 A. What I am seeing here is now we've moved to the growth
9 chart that takes you from age two to age 20, which is lots less
10 detail. But what I want to point out here is the changes
11 between age three and age four, she's following her normal
12 height chart. If there is something seriously disabling about
13 your health and condition, the height will level off, because
14 the body doesn't want to expend more energy than it's got to
15 grow you.

16 So this suggests that she was on track.

17 What we see on the bottom though is weight that goes from
18 her normal line, here, when she's three, to way, way below the
19 line at the time that she died.

20 I obviously don't have points in between. I can't assign a
21 hundred percent of that to being dehydration. But the first
22 thing you look at with a dehydrated child when you're in the
23 process of treating is getting a sense of what percent of body
24 weight has been lost, which is water.

25 So if you even give half of that weight loss to

1 dehydration, we're still talking about significant loss of
2 water. If you get up to six, seven, eight percent, then you're
3 talking about impairment of function. And if you're getting
4 much more than seven or eight percent, up to 10 percent, then
5 you're talking about that being a cause of death all by itself.

6 Now, I don't think dehydration was the exclusive cause of
7 death, but given all three parameters that we're looking at
8 here, it clearly was a major role in her onset of shock.

9 THE COURT: Can I ask a question? It's about two or
10 three slides ago. It was with the list of -- which include the
11 creatinine.

12 THE WITNESS: Yes. Creatinine and the UN.

13 MS. SMITH: That was 105, at Page 3, if you want to
14 pull that back up.

15 THE COURT: So earlier in your testimony you were
16 describing a situation in which a child could go -- I'm not
17 sure of the term you used, but it was a type of shock that's
18 essentially terminal.

19 THE WITNESS: Right. Irreversible shock.

20 THE COURT: Irreversible shock.

21 THE WITNESS: That's correct.

22 THE COURT: Can you take a look -- a static look at
23 how she presents at the time she's examined at the hospital and
24 her body chemistry and estimate when she would have entered
25 into that --

1 THE WITNESS: Terminal stage?

2 THE COURT: Yes.

3 THE WITNESS: I can answer that based on experience.

4 THE COURT: That may be something you were going to
5 get to at some point.

6 THE WITNESS: No, I don't think so.

7 MS. SMITH: Go ahead.

8 THE WITNESS: Terminal shock, irreversible shock,
9 lasts about two hours max.

10 THE COURT: It's a pretty short window.

11 THE WITNESS: It's really short. If you're in the
12 hospital, they can keep your lungs and your heart going, but
13 what happens when they dump all the water in to try and treat
14 the shock, they turn into a balloon.

15 THE COURT: It's not processing through the --

16 THE WITNESS: It's not going anywhere and the tissues
17 are still dying. So it's about a two-hour window where you --
18 where if you're not filling full of water and putting them on
19 artificial support. But if it's irreversible shock, it's
20 hopeless regardless of how long you keep them on life support.

21 THE COURT: Looking at the information you have from
22 this case, have you made any estimate as to when you think she
23 entered terminal shock?

24 THE WITNESS: I think it is very appropriate to
25 suggest that within two hours of her -- of her fatal cardiac

1 arrest, she was in irreversible shock and would not have been
2 able to be rescued. Before that, if she still had the ability
3 to get blood pressure back, with fluids and medicines, then you
4 could pull her from death's door, but it would have been nip
5 and tuck. Once you enter irreversible shock then those blood
6 vessels that I told you about that maintain pressure, they let
7 go, and there's no medicine that will bring them back.

8 BY MS. SMITH:

9 Q. All right, Dr. Ophoven. I'd like to take a look at some of
10 the autopsy findings related to this abdominal injury.

11 We're going to go back to Exhibit 107. Again, this is a
12 sealed exhibit.

13 If we could take a look at Page 4. All right, what do we
14 see here?

15 A. This is, in my opinion, if all you had was this picture,
16 you can define the elements of the fatal process pretty
17 clearly.

18 Firstly, there is no normal bowel and covering of bowel and
19 color and reflection of light present. Normally you see blue,
20 you see white, you see the ballooning of the bowel loops, and
21 they are white and blue and red.

22 This color that you're seeing all over -- and I'm going to
23 draw like this -- is a pasty yellow, opaque, not reflecting
24 light very well. This is the classic picture of peritonitis.

25 So any person who's ever seen it knows the second you open

1 the belly, that that's what you have. It's all over, so
2 there's nothing normal looking here.

3 The liver is pale. That's from shock. That's this right
4 here, the L. So that -- that's number one.

5 She has peritonitis, it's all over, and nothing looks
6 normal. So unless you find something, a bullet somewhere, this
7 is probably the cause of death.

8 The next thing that you see is this rectangle here, which
9 is collected fluid at the bottom, just by gravity. That's not
10 how it normally would look, they have them up. This, normally
11 it looks just like water. If there's much at all in your belly
12 it looks like water. This is a gray-brown, opaque fluid that
13 goes with there being pus in the tissue.

14 And the third thing you're seeing, that's even probably
15 more important, is that there's no fresh blood here. So she
16 didn't bleed to death. The blood is gone, if there had been
17 much.

18 And it's peritonitis, and it's likely to be directly
19 connected to the irreversible shock, because this is -- this is
20 a life-threatening medical catastrophe.

21 THE COURT: Does the absence of fresh blood have an
22 implication as to when the injury that resulted in the
23 peritonitis occurred?

24 THE WITNESS: Absence of fresh blood tells me that it
25 was not bleeding that did anything. And then when we look at

1 the autopsy slides, microscopically as well as these, it tells
2 you that time has elapsed since the traumatic injury has
3 occurred.

4 BY MS. SMITH:

5 Q. Can you say anything about that quantity of time?

6 A. Pardon?

7 Q. The quantity of time that's elapsed?

8 A. In my opinion, we're talking about the development of
9 peritonitis being at least, at least, 48 hours here for this
10 degree of inflammation and extension. Depending, again, I'm
11 missing the when-she-was-last-known-to-be-well part of the
12 equation. But we do know that she was described by some people
13 as someone who was clearly suffering from the onset of
14 peritonitis when she was gray, sweating all over, vomiting,
15 unable to keep anything down, so she was well into her process
16 when she was observed with those symptoms.

17 THE COURT: And you could form that opinion based upon
18 this picture, and does that include your evaluation of the
19 tissue slides? Or does the tissue slide add additional clarity
20 to that opinion as to when this developed?

21 THE WITNESS: This is three days. The tissue slides
22 tell me what kind of wiggle room I have. It could be three
23 days, and then the original injury was a month ago and then it
24 finally broke through. Or it was proximate to the breakthrough
25 to peritonitis, it was part of one process. And that's where

1 the slides give me the information.

2 THE COURT: One of the earlier charts, the graphs you
3 were showing about her growth, which you commented on, had an
4 implication as to dehydration, where there's the drop-off
5 between three and four. You didn't actually say this, but I
6 was wondering were you suggesting that the injury could have
7 happened earlier, I mean much earlier, and just didn't manifest
8 itself?

9 THE WITNESS: That's one of the questions that I am
10 required to ask, because sometimes I go in there and find
11 fibrous connective tissue and it's an old injury. No, it's all
12 within days.

13 BY MS. SMITH:

14 Q. We will get to those tissue slides in a moment for more
15 clarity.

16 For now, if we could take a look at Page 5. Can you
17 describe what we see here?

18 A. What the pathologist has done with this photograph is in
19 situ. In other words, with the injury being observed before
20 they take all the organs out. You're able to see the area
21 where the injury perforated the bowel. This continues to
22 enhance the abnormal color, the presence of diffuse
23 inflammation. These tissues are all damaged from body reaction
24 to bowel contents and inflammation.

25 But one thing that's kind of nice to see is here there's a

1 little segment -- oh, I don't want to do that.

2 There's a little segment of bowel that is as close to
3 normal as we're going to see here. It's a pink, it's vital,
4 it's alive.

5 This is what we would call necrotic. It has this gray-tan
6 color. This is actually how tissue looks in people who have
7 already begun decomposition if you do an autopsy. What you're
8 really seeing is decomposing necrotic tissue from the damage
9 from the inflammation and tissue injury.

10 But you'll notice here, more importantly, no fresh blood to
11 the naked eye. So this isn't just a little while ago.

12 Q. We'll take a quick look at the next slide.

13 A. This is just another angle in that same area.

14 Q. Great. Now if we could skip forward to Page 9.

15 A. Oops. Did I do that?

16 Q. No, this is where we're supposed to be.

17 This is actually some slides showing tissue with a couple
18 of different stains?

19 A. What I included here was a photograph of the glass slide,
20 which is usually about two or three inches long, and this is
21 where some of the organs are that we looked at under the
22 microscope.

23 For comparison, this is what the trichrome stain does.

24 So it's like H&E slides are the English of pathology, we
25 all understand it, and then because I wanted to see connective

1 tissue, I asked for it to be translated into French basically.
2 So I can see my connective tissue better with the trichrome
3 stain.

4 Q. Can we take a look at Page 10.

5 What are we looking at here, Dr. Ophoven?

6 A. This is adrenal gland, two views of the adrenal gland. The
7 upper picture shows the normal adrenal below the line I am
8 drawing here. This is a normal looking tissue. Then above
9 that is fat with a little bit of inflammation, pointed to by
10 the arrow, that's purulent inflammation. With a different
11 magnification, you can see that all of this material from here
12 to here is not supposed to be there, and that's pus. That's
13 the inflammation that was growing around the adrenal glands,
14 which are off to the sides from the hole in the duodenum. It's
15 in the back, but it's in a midline where your kidneys are, so
16 that means the inflammation has moved all the way over in the
17 retroperitoneum.

18 This is magnified showing the presence of this in the fat
19 around the adrenal gland.

20 Q. I believe when you were asked about this slide during your
21 interview, you said that this was evidence of days to get to
22 this level?

23 A. Yes, absolutely. This is -- again, we're cautious about
24 putting an actual number on it, but this is days.

25 Q. If we could skip ahead to Page 12.

1 A. This is some more tissue. Page 12 is from higher
2 magnification. What I am showing here is retroperitoneal fat
3 and tissue that is distributed through the upper back below the
4 diaphragm.

5 What you can see here is all of this gray stuff that's just
6 waving through here, the terms that we would use for that is
7 "diffuse" and "dense," as opposed to "focal" and "scattered."

8 This means a lot's been going on for a considerable time.

9 There is a little fresh blood here. Remembering that fresh
10 bleeding can occur during shock, as well as blood can remain in
11 tissue following an injury. But this is microscopic.

12 Remember, there was nothing to the naked eye to suggest there
13 was residual of any significance.

14 Then the higher magnification just shows that this is a
15 mixed population of cells. Predominantly PMNs, which are the
16 infantry that come in, the first round of inflammation, but
17 there's other cells in there.

18 Q. If we could take a look at Page 13. We're looking at
19 another set of slides here?

20 A. If all I had was the peritoneum photograph and this slide,
21 it's kind of the case.

22 What this shows on the right now is the H&E. This is the
23 cross section of the duodenum with some pancreas next to it.
24 The duodenum is a tube, it's got layers and muscle going
25 multiple directions so that it can move the fluid through it

1 and so forth.

2 In this area right here -- which you'd see better without
3 the arrow -- there is a defect in that tube. So the question
4 then comes is that an artifactual defect that occurred from the
5 autopsy or is it a real defect that occurred from the blunt
6 impact.

7 And what we can tell here is that on higher magnification,
8 but even now, with this, you can see there is a discoloration
9 over the pink line here and over the blue line here that tells
10 you that inflammation and degeneration is going on.

11 So this is not an artifact this is a real hole. He nailed
12 the section exactly where you want it to be.

13 And these two things basically can tell you the journey
14 even if there aren't other factors involved.

15 Q. Then the next slide, Page 14, I believe is healthy tissue
16 for comparison?

17 A. This is normal, just showing you how it's laid out.
18 Normally the bowel wall is the thin pink ribbon that's intact
19 all the way around, blue with trichrome. Pancreas here.
20 Pancreas here. Lining of the bowel towards the top of the
21 slide.

22 Q. If we go to Page 15 now, we're looking at slides from
23 Rachel again?

24 A. Again, it's not taking the stain as well. Sometimes that
25 has to do with the lab, but more importantly it's usually

1 because the tissue is degenerated and dead, it doesn't take the
2 stain.

3 This section that I photographed here shows exactly where
4 the muscle wall is disrupted. This is a big patch of purulent
5 material. The lining of the bowel is here. And you can see at
6 the various magnifications. This is low, lowest. And probably
7 the 5X is the best picture of the whole picture. This is
8 inflamed, dead, lacerated, and not a lot of blood there.

9 Q. If we look at Page 16, I think we have a slightly higher
10 magnification?

11 A. This was simply showing the edge of the disrupted muscle.
12 And then here, you can see I'm pointing at all this purulent
13 debris, purulent and necrotic debris.

14 Whoops. That's not good.

15 This is just a big pile of pus.

16 Q. Again, no blood.

17 A. No blood.

18 Q. All right. Let's take a look at Page 17. Here, I believe,
19 we have some different staining.

20 A. Yeah, it's again just showing how the trichrome can be so
21 useful in dividing the different tissue layers. Because with
22 H&E everything is pink if it's not cell nuclei. And you can
23 see here that the smooth muscle of the bowel wall is a
24 different color than the connective tissue that is not muscle.
25 So it's just another way of seeing how this relates to the hole

1 or the laceration. The inflammation higher magnification is
2 just showing us fibrin and inflammatory cells. The majority of
3 these are pus cells.

4 Q. I think on the next page we just have a higher
5 magnification?

6 A. Again, this I just took because it's a nice way of showing
7 the percolation of the cells, the population of the cells, and
8 then what was going on in her body when -- the material that
9 she swallowed from her mouth contains bacteria and so forth,
10 and so this bacteria would continue to grow after death. And
11 so all these little squiggles are bacteria that were part of
12 the leakage.

13 Q. Can you say anything about the timing it would take for you
14 to see these types of responses?

15 A. Well, the inflammatory response, there are some rules that
16 I use and teach, and that is you don't typically see any pus
17 cells for four to six hours. It doesn't mean it was less time
18 if you don't see them, it's just you can say it's been four to
19 six hours if I see a couple. But by the time you see diffuse,
20 consolidated across tissue planes, now you're talking days.

21 Q. Can we take a look at Page 22.

22 These are some slides of a different portion of the bowel,
23 is that correct?

24 A. Yes. My understanding is that this was sections of bowel
25 that were from the peritoneal cavity, because that's where the

1 bowel lives normally, and this is bowel bowl that's been
2 exposed to the peritonitis. So it's a secondary process, but
3 they've been cooking in the bacteria and the pus and this is
4 the bowel that's got that going on.

5 Q. And the microscopic is on the next page, on Page 23.

6 A. Again, what we're seeing here in this section of tissue is
7 on the right side is the bowel, on the left side is what we
8 call the serosa. Serosa is the term we use for the outside of
9 the bowel. So the wall of the bowel is -- hasn't been
10 traumatized, so where you see the inflammation and the bacteria
11 is on the outside of the bowel.

12 THE COURT: I'm sorry. When you say, "outside of the
13 bowel," are you talking about the space outside the bowel or
14 are you talking about the outer layer of the bowel?

15 THE WITNESS: I meant the outer layer of the bowl.

16 THE COURT: Thank you.

17 THE WITNESS: So the serosa is the outer layer of the
18 bowel. There's no inflammation that's gone into the bowel
19 wall, it's just been percolating in this peritonitis. And
20 whenever we see inflammation of this nature, even if I didn't
21 have that picture from the beginning, if I had this section of
22 bowel, I would be able to diagnose peritonitis.

23 MS. SMITH: Thank you, Dr. Ophoven.

24 BY MS. SMITH:

25 Q. I'd like to take you back to your 2010 report, which is

1 Exhibit 106. I'm actually not sure that we've looked at this
2 yet.

3 You did write another report in February of 2010, do you
4 recall that?

5 A. Yes, I do.

6 Q. Could we take a look at Page 2? If we could enlarge the
7 first two paragraphs below where it's indented.

8 Dr. Ophoven, here you say that many opinions were provided
9 to the Court and the jury, but it is your opinion that the key
10 findings in this case of abdominal trauma of many days duration
11 were not made clear. The evidence shows that the fatal
12 injuries to Rachel could not possibly have been inflicted on
13 the day prior to her death, and that the veracity of this
14 evidence is as scientifically precise as any forensic
15 determination available.

16 Is that still your opinion?

17 A. It certainly is.

18 Q. Is that based on the slides we just talked about, the
19 autopsy photos we reviewed, your knowledge of the medical
20 literature, and your own personal experience?

21 A. Yes, ma'am.

22 Q. As you're aware, Rachel suffered some other injuries in
23 addition to her bowel injury. Are any of the other injuries,
24 in your opinion, related to her death?

25 A. They didn't relate to her causation, no.

1 Q. And would any of these other injuries have any effect on
2 the speed or timing of the inflammatory process that we just
3 talked about?

4 A. No, ma'am.

5 Q. All right. If I could take you back to Page 1 of this
6 exhibit. Again, this Exhibit 106. If we could enlarge that
7 first paragraph.

8 Here you explain that before authoring this 2010 report you
9 requested some special stains on the anogenital tissue of
10 Rachel?

11 A. Yes.

12 Q. Can you explain to us why you did that?

13 A. Because I wanted to further examine the degree and extent
14 of vital reaction that was present. I know I had already put
15 forward some opinions, but I think that because of these
16 differences it warranted a further look.

17 Q. I'm going to take you back to your photographic atlas so we
18 can take a look at those injuries.

19 THE COURT: Before you go there, go back to that last.

20 MS. SMITH: Can you enlarge the paragraph again, John.

21 THE COURT: So the last sentence there says you can't
22 make a precise determination, but it did not occur in the few
23 days prior to her death. So how confident are you as to when
24 you can make a diagnosis as to when it did occur?

25 THE WITNESS: This is the anogenital tissue.

1 THE COURT: Okay.

2 THE WITNESS: There are some rules, pathological
3 rules, that give me guidelines to being able to say how long it
4 takes for the kind of fibrosis and -- but neovascularization.

5 So I can give ranges.

6 "Precise" means, when we get into a medical-legal
7 environment, 26, 27, 31, 32. Obviously, "days" is not a
8 favorite way of saying something, but it's better. "Weeks" is
9 a better description than "days." "Months" is a better
10 description than "weeks" if you have sufficient vital reaction.

11 And in this particular area, the tissue slides of the
12 anogenital region, because of it's -- the original accusation
13 was that those injuries occurred proximate, then it required
14 that I have better language than there's vital reaction
15 present.

16 BY MS. SMITH:

17 Q. We're going to take a look at those tissue slides in just a
18 moment.

19 If we could go back to Exhibit 107. Again, this exhibit
20 needs to be sealed. And I just warn that we're going to see
21 some graphic photographs momentarily.

22 If we could take a look at Page 26.

23 Okay. Can you explain Rachel's vaginal injury to us
24 briefly?

25 A. Yes. The tissue, this is a wound. So I think the best way

1 to describe this, there's a wound. There's no normal
2 architecture remaining in the tissues.

3 Basically between -- between 4:00 and 8:00 o'clock on a
4 clock, assuming that the top of the slide is 12:00, the wound
5 covers an area that is basically the lower third of the -- what
6 we call introitus, or entrance to the vaginal area. The hymen
7 would be here. Then all of the material that we're seeing here
8 is mostly outside, with a little bit of a fold of vaginal
9 tissue protruding in. But the wound itself is mostly on the
10 outside.

11 We call -- this is the posterior fourchette, and this whole
12 area has lost its normal anatomical detail. It does not have
13 fresh blood in it, and it shows some of the that similar
14 coloring that we saw in the belly. It's kind of the necrotic
15 dull yellowy pale color.

16 Q. Could we take a look at the next page? All right. These
17 are the special stains that you requested on the anogenital
18 tissue?

19 A. Right. The sections -- the sections that were taken were
20 taken from the area of the wound. So it includes some normal,
21 normaler (phonetic) appearing tissue at the top, and then the
22 wound itself is in the center. I am pointing that out on the
23 trichrome stain, and similarly through the middle of the
24 section. Again, these are really good sections of tissue,
25 they've been taken well.

1 Q. On Page 28, we see under the microscope?

2 A. The part that was important to me to point out here is that
3 the tissue that we're looking at that's in the wound is kind of
4 folds of material that don't have architectural relevance. But
5 what you can see that's most important here on the H&E is that
6 there is this pile of material that's full of engorged small
7 vessels. Too many vessels. And there are areas of relatively
8 low cell content material that is the result of the body making
9 new tissue to heal. So this is what we would call a mature
10 vital reaction.

11 However, on the surface, you can see here the body has been
12 able to replace the surface cells a little bit. Those are
13 epithelial cells. Those are the cells that line all the things
14 that we have from top to bottom, and there's a lot of little
15 bit of what we call regeneration. They're coming back.
16 They're normally way thicker than that, but there's a little
17 bit of residual intact material.

18 Then the rest of this you can see are these blood vessels,
19 that is what we call neovascularization. That means that when
20 tissue is healing and it's growing new tissue, it also grows
21 new blood vessels. So that's part of the aging process. When
22 you get new blood vessels now, you're talking weeks.

23 Q. Can you see anything additional in the slide on the
24 right-hand side?

25 A. Well, this is blood that's in this tissue, that was evident

1 from the slide, the first slide that I saw, and there are some
2 intact red blood cells in there. But this tissue is not
3 normal, all the tissue over here is not normal tissue.

4 Q. Can you say anything about the age of the injury based upon
5 these slides?

6 A. Weeks.

7 Q. Weeks?

8 A. Yeah. This injury, this wound --

9 Q. Yes?

10 A. -- began weeks prior.

11 Q. Is it possible that this wound could have predated when
12 Mr. Jones began living with Rachel Gray and her family, which
13 was a few weeks before her death?

14 A. Yeah, it's possible.

15 Q. I believe you said there's also some evidence of some
16 fresher blood?

17 A. Yeah, there is fresh blood in here, and that certainly is
18 something that you have to remark on. There's fresh blood in
19 the tissue. One thing that I would want to know is, again,
20 when we're dealing with a sexual injury then there's a whole
21 nother history that is -- that you mobilize in the
22 investigative process.

23 So that history is pain when they get in the bathtub, pain
24 on urination, how long has there been blood in the underpants,
25 or a little bit of a discharge, itching, burning, complaining.

1 There's a whole profile that you take when you're looking at --
2 when you're looking at a healing injury, when could this have
3 begun.

4 Obviously, I wouldn't be surprised to find some fluids
5 coming from that wound, because it's clearly not healed. So I
6 would expect that her underpants would have had material in it,
7 but then the question is how long has that been going on and
8 did anybody follow that question up.

9 Q. Did you look at those photographs of Rachel's underpants?

10 A. Yes.

11 Q. Do you have any comment about what the fluid present looked
12 like?

13 A. Well, it looks like it had blood in it. Again, this is
14 post mortem, a lot of things have been going on, places that
15 are wounds are going to start to bleed that had not been
16 bleeding before because of what happens during shock. But I
17 would have been shocked if there wasn't something present there
18 because this is an open wound.

19 Q. Is it possible that this fresh blood that we see here is
20 simply a reaggravation of her older injury? Is it evidence of
21 a new trauma at all?

22 A. No, I can't say that there is evidence that she has been
23 retraumatized proximate or at the time of her death. I can't
24 say she wasn't, but I would have expected to see -- I would
25 have expected to see more bleeding on the surface of the

1 tissue. Again, depending on whether it had been washed and
2 what people saw when they first examined it and so forth.

3 Q. All right. I'd like to shift gears a little bit and talk
4 about Rachel's scalp injury.

5 If we could go to Page 2. This is a picture of Rachel's
6 scalp. I don't believe we have any photo micrographs of the
7 scalp injury here?

8 A. No, I didn't take any of those.

9 Q. Can you make any comments about the possible age of this
10 injury based upon what you have reviewed?

11 A. Based on what I have reviewed, I would say it's recent or
12 fresh. By "recent" or "fresh," by pathologist's terms, when
13 we're talking about laceration of skin and soft tissue, we're
14 talking about less than two or three days. That's the
15 ballpark.

16 Unlike what was described at the time of the trial, we
17 can't eyeball wounds and say how old they are with the naked
18 eye. The only tool we have is microscopic examination, or a
19 history that tells us it happened exactly at this point in
20 time.

21 So, looking at this, I can certainly make some comments
22 against possible observations or historical events.

23 Because she has thick hair, the pattern of abrasion is
24 going to be a little different than it would be if it was on an
25 exposed area without hair. So the one thing you can say is

1 that this is a classic laceration, it's got abrasion around the
2 edge, you can see the irregularity, this is not an incision.
3 And beyond that, I would have to reserve judgment until looking
4 at the micros.

5 The micros don't tell us much beyond there's some
6 inflammation at the edge of one of these, but there isn't
7 repair. Because there's not repair present, then I'd say it's
8 a fresh injury.

9 Q. Did you review Dr. Howard's pretrial interview?

10 A. Yes.

11 Q. Are you aware that he indicated based upon his microscopic
12 review that this wound was possibly two days old?

13 A. Sure.

14 Q. Is that consistent with your opinion?

15 A. Yes.

16 Q. Are you aware that there is some evidence that this
17 laceration began bleeding late on the night of May 1st, the
18 night before Rachel died?

19 A. Sure.

20 Q. Is there anything about the inflammatory process that
21 Rachel was going through at that period of time that might
22 cause a wound that was in some stage of healing clotting to
23 then reopen and start bleeding actively again?

24 A. Absolutely. Absolutely. It's part of the irreversible
25 shock and metabolic acidosis, which is what happens to the

1 cells of the body when they're not getting oxygen and glucose,
2 so it triggers all kinds of things in the body. And bleeding,
3 rebleeding or new bleeding, spontaneous bleeding, bleeding with
4 handling, those are all things that occur during shock.

5 Q. Is that related to a process called disseminated
6 intravascular coagulation, or DIC?

7 A. Yeah.

8 Q. Can you just explain that process to us, Doctor?

9 A. "DIC" for short. The body has a complex system for
10 managing its clotting and clottability.

11 The body has circulating molecules all the time that are
12 like magic, like magic, can initiate clotting. Typically at a
13 local site where the triggers are from inside of damaged cells.

14 The problem is that if you are sick all over and you are in
15 shock, the damaged cells we're talking about are all the cells
16 of the body, and they release acid. Acid triggers this
17 consumption of molecules, so that within a fairly short, maybe
18 even two or three minutes, you are no longer able to clot, and
19 clots that you had will become destabilized.

20 So frequently these kids come in in shock, and you'll start
21 to see marks appearing on their body, not even from where
22 you've touched them. They just are bleeding into tissue,
23 bleeding from old wounds, bleeding from their mouth and nose,
24 bleeding from their urine, bleeding from their GI tract. It's
25 the terminal event. That particular mechanism is known as DIC.

1 So if you have an open wound like the one that she has in
2 the introitus of her genitals and the scalp laceration, then
3 fresh bleeding from those in no way is a sign to me that that
4 is a new injury or reinjury of an old wound. It means that the
5 body can no longer clot, and that's it.

6 Q. I believe you just mentioned that in this process, a DIC,
7 sometimes marks can appear on the exterior of the body.

8 A. Yes. It's absolutely remarkable. Children with leukemia
9 who can't clot, children with shock, they just develop marks
10 all over without anyone hurting them. So that's one of the key
11 questions in a case like this where you have lots of blotchy
12 discolorations, the real issue here is how many of those
13 blotchy marks are inflicted trauma or how many of those are
14 part of the terminal chemical chaos that she was suffering from
15 her peritonitis and sepsis and so forth.

16 Q. Is there any way in looking at the autopsy photos to help
17 distinguish between what might be caused by DIC versus external
18 trauma?

19 A. Well, yes, there are. Yes. You can cut into the tissues
20 and see whether or not there is what looks like inflicted
21 bruises in the subcutaneous tissue, as opposed to this kind of
22 discoloration that you get.

23 Sometimes you can't make a distinction and all you can do
24 is look at the pattern and see if the pattern makes sense to it
25 being inflicted trauma versus something you can see in shock.

1 Then the third determination would be is that you can't
2 distinguish between DIC marks and the other. But if you have
3 the ability to look at the underside of the tissue to see if
4 there is bleeding suggesting that there's been all kinds of
5 pummelling and bruising, then, you know, that would lead you to
6 say, well, that's probably abuse.

7 Q. Did you see some autopsy photos in this case that showed
8 that inner layer that we're talking about?

9 A. Yes, there are two photographs that show the tissue of her
10 chest and abdomen from the underside.

11 MS. SMITH: Your Honor, I don't know if you want us to
12 display those autopsy photos or just....

13 THE COURT: To the extent you think that's going to
14 help explain what you're telling us.

15 BY MS. SMITH:

16 Q. So that is Exhibit 65B, which, again, is a sealed exhibit.
17 At Page 47.

18 I apologize again for the graphic images.

19 Can you describe what we're seeing here.

20 A. What was done here is instead of -- instead of just the
21 incision being here and peeling back all of the tissue, what he
22 did was peel back the skin and soft tissue laying over the
23 chest and the abdomen.

24 He didn't have to do that. That's not -- normally you just
25 open it here and you open along here, or whatever, and then you

1 can just peel back the full wall of the abdomen, and then you
2 open the chest and peel back the ribs and the skin at the same
3 time.

4 What you can see here, and the part that I am focusing on,
5 is there is no evidence of traumatic injury here.

6 THE COURT: That's the layer below --

7 THE WITNESS: That's right below the skin.

8 THE COURT: Below where you -- the red marks we see
9 and the --

10 THE WITNESS: When you look at the autopsy pictures,
11 you've got all these marks on her chest and abdomen. And I
12 raised the issue during many of my conversations in the reports
13 about whether or not DIC had a role in the development of marks
14 that people said that they hadn't seen, and whether or not DIC
15 could have contributed to the appearance of her torso and body
16 and some of the other marks that evolved during her dying
17 process that were not part of an abusive assault.

18 So the question here is when we're looking at the marks on
19 her chest and abdomen, can we say for certain those were all
20 inflicted bruises from an assault, or could DIC and the blotchy
21 changes and coagulopathy affect how that appears from the
22 outside, and then from the underneath you can see that there
23 isn't -- even along the line where you're making the incision
24 here -- there is no evidence that there is any bruising or
25 bleeding into this underside of the skin.

1 THE COURT: So what does that tell you?

2 THE WITNESS: Well, it makes me -- it confirms what
3 was already an impression, is that DIC may have actually
4 influenced the appearance of her, how many marks there was on
5 her body.

6 So rather than saying all the marks on her body that we're
7 seeing are all someone causing her an inflicted injury, some of
8 those marks may have actually appeared during the dying
9 process.

10 THE COURT: But based on the information you have
11 available to you, you can't make a distinction one way or the
12 other?

13 THE WITNESS: Well, I can say that without any
14 evidence of deep bruises here, it certainly strongly suggests
15 that many of those marks, if not the majority of those marks on
16 her chest and abdomen, may actually be the result of the DIC.
17 I can't say they all are, but I can say many of them might be.
18 And there is no evidence here of inflicted trauma to the
19 underside of her skin and soft tissue.

20 THE COURT: Would the length of time between the
21 infliction of trauma and the autopsy photo that you're looking
22 at have an impact on how deep it would manifest?

23 THE WITNESS: It wouldn't affect how deep it would
24 manifest. It would -- but when we're talking about marks that
25 are over the rib cage --

1 THE COURT: Right.

2 THE WITNESS: -- you'd expect there to be, if you've
3 got all those marks on her chest, if there was a beating that
4 caused all those marks, where is the injury --

5 THE COURT: Right. I got it. My question was not
6 very well worded. What I am saying is time makes no difference
7 if it were a blow, it would show up in that photo regardless of
8 whether it happened just before you opened her up or hours
9 before.

10 THE WITNESS: No, it wouldn't make any difference.

11 THE COURT: That was my question.

12 THE WITNESS: No. I'm sorry.

13 THE COURT: Thank you.

14 BY MS. SMITH:

15 Q. All right. Let's go back to Exhibit 107, which is also a
16 sealed exhibit, and take a look at Page 3. This is an external
17 photograph of Rachel at autopsy.

18 Could some of the marks that we see here be attributed to
19 DIC?

20 A. That's what I have been discussing with counsel since I was
21 first involved in the case, is that many of these have that
22 appearance of blotchiness, not like classic bruises from being
23 beat up.

24 So the issue of whether or not DIC contributed or may even
25 have been the main reason why you see all of these marks has

1 been on the table. I think the absence of any bruising,
2 especially over the ribs, if you've been pummeled, to be the
3 cause of all of these things, then you would have expected to
4 see at least a bruise. Because when you get hit over a bruise
5 you usually get marks that are the result of the compression of
6 the tissue between the rib bone and the outside.

7 So what I am saying is I think there is a very legitimate
8 reason to suggest that all these marks may not be the result of
9 abusive trauma.

10 Q. You do agree though that there is some evidence of bruising
11 on Rachel, that she -- we're not saying everything on her body
12 is the result of DIC.

13 A. Oh, no. No, no, no. I'm just saying that before you go
14 off and say every mark on her body is because somebody had some
15 kind of -- you know, lost it. I'm very skeptical.

16 Because of how they look, they're kind of merging together,
17 they're of strange sizes, they're not running the rib cage
18 pattern. It's just -- I'm very worried that these could have
19 been misinterpreted.

20 Q. On this exhibit you also have an arrow pointing to a
21 circular mark on the chest?

22 A. Yes.

23 Q. Do you have an opinion about whether this mark could have
24 been caused after Rachel died possibly in the hospital?

25 A. Yeah, I think that could have been from removing a monitor,

1 one of those -- either a paddle or a monitor, something. I'm
2 not saying it is, because usually we get the body with those
3 things still on it, but it certainly is what appears to be a
4 fairly decent semicircle.

5 Q. And consistent with your testimony that you've just been
6 giving it's possible for those marks to form after death?

7 A. Sure. We see those -- we see those even -- you know, some
8 people say that you have to have a beating heart to have a mark
9 on the skin, and that's not true.

10 Q. Related, is it possible for the body to continue to bleed
11 or release blood after death?

12 A. Sure.

13 Q. Could we take a quick look at Exhibit 49? Which is also a
14 sealed exhibit.

15 This is a photo of Rachel at autopsy that shows fresh
16 blood, I believe, on the sheet. Is it consistent with one or
17 more of Rachel's wounds continues to emit blood after she died?

18 A. Absolutely. Or, you know, medical interventions. Or I
19 think she had some purge in her -- it sounds like she had some
20 purge in her ears. Usually material comes out of the mouth,
21 depending on which way the head was turned. Certainly, I
22 wouldn't have been surprised to see stuff come out of her
23 scalp.

24 Q. Is it possible that on the morning that Rachel died, after
25 she was already dead when she was taken to the hospital --

1 THE COURT: I'm sorry. Can you rephrase that
2 question. On the morning she died -- can you rephrase the
3 question.

4 MS. SMITH: Sorry, Your Honor.

5 BY MS. SMITH:

6 Q. On the morning of Rachel's death, she was taken to the
7 hospital, she arrived DOA, are you aware of that?

8 A. Yes, I am aware.

9 Q. Is it possible that she was continuing to bleed en route to
10 the hospital that morning?

11 A. Sure.

12 Q. Even though she was already dead?

13 A. Sure. Stuff comes out all the time from dead bodies. If
14 there are open wounds it can come out from that.

15 Q. Is it possible some blood in the van could have come out of
16 Rachel's body that morning even though she was already dead?

17 A. Oh, absolutely. That's why -- yeah. Absolutely. No
18 question. I mean, it comes out of your -- it comes out of your
19 nose and mouth after you die always, and then if she has open
20 wounds, then blood can come out of those, too.

21 Q. I'd like to take a look at Exhibit 51.

22 These are some photos of Rachel's face at autopsy. And we
23 see some bruising here. Are you aware of some statements made
24 by Rachel's sister that she found Rachel lying in the doorway
25 of her room early in the morning?

1 A. Yes.

2 Q. The day that she died?

3 A. Yes.

4 Q. I believe you testified earlier that it's possible that
5 kids could be moving around right before they're going into
6 this final stage of shock?

7 A. I've had them try and get to the bathroom within two hours
8 of their cardiac arrest, with the same kind of picture that
9 this little girl had, because of their unrelenting thirst.

10 Q. Is it possible that Rachel may have collapsed at some point
11 while she was in that process?

12 A. Sure. This is the orbital bone, right there (Indicating).
13 So if she hit that falling down, that certainly is where blood
14 could pool.

15 Q. I'd like to show you Exhibit 50.

16 If we could enlarge the photograph on the right.

17 This is a photograph of the entry to the room where Rachel
18 and Becky and Brandie slept. Rachel was found lying in that
19 doorway by her sister Becky in the early hours on May 2nd.

20 Do you think it's possible that Rachel might have hit her
21 head, for example, on that table there that could have caused
22 some of the facial bruising?

23 A. Sure. She could have hit it on the leg, on the table,
24 bottom tray there, the door. Just impacting it on the floor
25 could have caused a bruise in the corner of her eye. Because

1 it's right -- where your eye bone is is exactly where that
2 bruise is.

3 Q. I believe you also just mentioned that there was some blood
4 in the ears observed at autopsy.

5 A. Yes.

6 Q. Do you have any opinion about what may have caused that?

7 A. It's my opinion it was probably purge that collected. It
8 comes out of your nose and it collects in the ears not
9 infrequently. The only time that you'd be really worried about
10 blood in the ears is if it's a head trauma case, and then blood
11 in the ears can herald a basal or skull fracture. So we look
12 for that, but she didn't have that. So the blood in ears, my
13 first reaction would be that it was purge that collected there.

14 Q. You've also expressed an opinion in your reports that
15 neither the fatal abdominal injury nor Rachel's scalp wound was
16 consistent with infliction by a pry bar that was found in
17 Mr. Jones' van.

18 A. No, ma'am. I have seen lots of wounds inflicted by bars of
19 a variety of kind, kinds, and that's not -- I can't even
20 imagine how you could do that unless you've -- unless she
21 tripped and fell on a pry bar, then the shape of the bar itself
22 might leave a laceration. But someone inflicting a wound with
23 a pry bar, I can't even comprehend how that could happen. I
24 mean, the kind of injuries you get, you'd have a very different
25 pattern of injury.

1 Q. For example, you might see a skull fracture?

2 A. Yeah.

3 Q. And in the abdomen you'd expect to see more injury to some
4 of the tissues?

5 A. Well, a focal injury with something like that, one would
6 expect to see a pattern, a mark, perhaps even a penetrating
7 injury.

8 Q. Do you have any opinion as to whether Rachel's fatal
9 abdominal injury could have been inflicted by another child?

10 A. I do.

11 Q. And is that possible?

12 A. Absolutely.

13 Q. Have you observed that in your practice?

14 A. Over the years, fatal injuries are not -- obviously not
15 common. But it's only been in the last five or six years that
16 people in the field have started to acknowledge that the -- the
17 kind of quick reflex that people had to say that a child
18 couldn't hurt or kill another child is actually untrue. What
19 we've also discovered is the number one inflictor of injuries
20 to children is other children.

21 Now, granted, they're not typically serious or fatal, but
22 you take a 35-pound kid and have them jump, kneel, stomp, drop,
23 sit, bounce, you're talking about -- especially if the stomach
24 is full, because there's so little bleeding around the tissue,
25 one almost wonders if it wasn't a blow-out from some kind of

1 compression. But, of course, another kid could cause it, and
2 that's been well reported.

3 Q. Have you observed anything in your review of Rachel's
4 medical records or your review of her other injuries that would
5 cause you to believe that the timeline of her inflammatory
6 response would be different than in the normal case?

7 A. No, there's nothing here to suggest that she wouldn't have
8 responded like any other person in the healing process.

9 Q. Have there been any developments in the medical research in
10 the field of pathology that have changed the understandings of
11 these types of injuries and these inflammatory responses, since
12 1994, or 1995, when Mr. Jones' trial was?

13 A. No.

14 MS. SMITH: Thank you, Doctor. I don't have any other
15 questions.

16 THE COURT: All right. Why don't we take a brief
17 break before we begin cross-examination. Ten minutes. Thank
18 you.

19 (A recess was taken from 10:51 a.m. to 11:12 a.m.)

20 THE COURT: Doctor, do you want to resume the stand,
21 please.

22 Ms. Gard, you're up.

23 CROSS-EXAMINATION

24 BY MS. GARD:

25 Q. Hi, Dr. Ophoven.

1 A. Good morning.

2 Q. Let's just start out with I want to clarify any kind of
3 confusion. When you were talking about DIC, you suggested that
4 some of the child's bruises or apparent bruises could, in fact,
5 have been caused by DIC.

6 A. Right.

7 Q. You're not disputing that some of her bruises were abusive
8 in nature as well, right?

9 A. No, I'm not.

10 Q. And you're not disputing, you're not backing away from the
11 opinion that you stated in your report that she was a battered
12 child.

13 A. I am not.

14 Q. And you also are not backing down from your opinion that a
15 caretaker of the child should have known that she needed
16 immediate medical attention.

17 A. I am not.

18 Q. And you still hold that opinion today.

19 A. I do.

20 THE COURT: Can I ask you, that's a pretty broad brush
21 on she needed medical attention. Maybe you might want to
22 explore that in a little more detail, because obviously timing
23 in this matter is so important.

24 MS. GARD: Sure.

25 BY MS. GARD:

1 Q. When she started -- began to vomit on Sunday afternoon and
2 then had a progressive decline, what appears to be a
3 progressive decline after that, the caretaker at some point
4 should have realized that, at what point should that be?

5 A. In my opinion, there was an element of delay in this case
6 that, based on my understanding of the process, other people
7 saw her looking poorly the day before. How you define that is,
8 you know, obviously a personal issue, but a child that can't
9 keep anything down, a child that is clearly suffering from a
10 deteriorating process, regardless of what you ultimately
11 determine, is there was an unfortunate delay between her
12 deteriorating process and her death. There was a period where
13 she was unwell, significantly unwell, before she went into
14 irreversible shock.

15 So, given the nature of her condition, it's not, in my
16 opinion, feasible that she would have been -- that she would
17 have appeared to be in a reasonable state, that she needed to
18 go to the doctor. She would have needed to go to the doctor.

19 Q. I want to come back to how she was looking the day before
20 in a minute. But had she gone to the doctor before
21 irreversible shock set in, this would have been a potentially
22 survivable injury?

23 A. Potentially. Although the nature of this injury being what
24 it is, they rely on ultrasounds and they rely on CT scans for
25 the diagnosis. And because of the location of this injury, you

1 have to be considering the possibility of a duodenal tear to
2 actually make the diagnosis.

3 Because if you do a regular CT scan, you're not going to
4 see blood all over in the belly, you're not going to
5 necessarily see the kinds of indicia that you would if you had
6 like a tear in the liver, or a hole in the bowel that was in
7 the peritoneum. So the diagnostic process is difficult.

8 But, that said, assume that they made the diagnosis and
9 were able to intervene and treat her shock before she went into
10 irreversible shock, she had a chance at surviving.

11 Q. I think you said on direct that the abdominal injury would
12 have been -- or maybe you didn't. Maybe it's a question for
13 you. The abdominal injury, when it was inflicted, would have
14 been very painful, is that right?

15 A. Yeah, she would have had her air knocked out. She would
16 have cried, she would have acted like someone who got punched
17 terrible in the stomach, but she wouldn't necessarily have had
18 an alteration in her vital signs or -- until she actually went
19 into the terminal process, she might have looked okay.

20 My experience with these cases is these children usually
21 get more -- get more quiet. I don't mean verbally, I mean they
22 don't want to move around a lot. But until the inflammation is
23 significant, they may even be able to move around without
24 complaining.

25 Q. But she wouldn't ever be -- she would have some degree of

1 ongoing discomfort, right, in her abdominal area, presumably.

2 Likely.

3 A. Until it gets into the -- until it gets into the
4 peritoneum, you're not going to see the kind of symptoms like
5 you get with peritonitis or with appendicitis. She might not
6 have been having a fever, she may have been -- so she may have
7 been -- again, depending on the medical sophistication and the
8 level of attention, they may not have appreciated that she had
9 anything bad going on.

10 Q. I want to talk first, just to start with the vaginal
11 injury.

12 On direct, you had expressed the opinion that this injury
13 was weeks old. And I recall when you spoke to us -- you recall
14 being interviewed a few months ago, right?

15 A. Yes. Oh, yes. You were very cordial. I remember that.

16 Q. Oh. Thank you. I remember at that time or do you recall
17 at that time telling me that you couldn't exclude a fresh
18 trauma to the vagina?

19 A. No, I couldn't, but what I was answering to you -- and I
20 believe I already said that direct -- I couldn't say that
21 somebody didn't reinjure her or didn't cause newer bleeding or
22 trauma, but the initial injury could not have been recent.

23 Q. Right. So just to make sure I understand, there is an
24 injury that's older, that's what you're saying.

25 A. Yeah, that wound that's unhealing (phonetic), that's weeks

1 old, and then I can't say -- I can't say that she had been
2 sexually misused multiple times, for instance.

3 Q. Including shortly before her death.

4 A. Well, there is no evidence of it, there is not a lot of
5 fresh blood, but I can't exclude that possibility, no.

6 Q. All right. On the timing issue, I guess I want to start
7 with your first report back in 2002, which we looked at, which
8 was Exhibit 103. If you need to see that, do you need a copy
9 of that?

10 A. If at some point you can read to me, I can agree with
11 myself or not agree with myself.

12 Q. Well, I guess in that report, my question is in that report
13 you had identified the range as between 24 to 48 hours for her
14 fatal injury, her fatal abdominal injury. Today you said it
15 was at least 48 hours. So what happened to the 24? Are you
16 backing down now from the 24?

17 A. Well, yeah, I don't think 24 is legitimate. I don't think
18 that's legitimate.

19 Q. Well, you had it in your first report though, you agree
20 with that?

21 A. Well, that's a range. It was more than a day was what I am
22 trying to say here. So I probably wasn't as clear. And I
23 think I've already said that before, is that I wasn't as clear
24 about the timing as I could have been. It didn't happen within
25 the day that she was alone with Mr. Jones.

1 Q. You had said on direct that you looked to the last time the
2 child was well. Do you remember saying that?

3 A. No, I needed to look at the last time the child was well.
4 And that would have been what the investigation warranted had
5 they not focused on Mr. Jones immediately. The proper way of
6 evaluating these kinds of cases is to get your calendar out --

7 Q. Okay. I don't mean to cut you off, I'm sorry, but let me
8 try to refocus you.

9 I think I'm getting to what you were about to ask, which is
10 that -- you had said that that's the starting point, right,
11 for --

12 A. That's how you investigate these cases, is you find a
13 person who has no dog in the fight to find out when the child
14 was observed to be behaving either their baseline or perfectly
15 normal for a four-year-old. Pick the one.

16 I can't imagine a child that's been repeatedly molested is
17 necessarily baseline. But whatever her normal activity level
18 would be, you find that date from someone who is reliable --
19 which in this case obviously is not necessarily anyone who
20 lives in the house -- and identify that time. And then you
21 work your way the other direction.

22 From -- not from the emergency room backwards to when the
23 child was alone with someone, which is how it's commonly done.
24 You go from when they were last known to not be hurt and work
25 your way forward, and then find out if anything happened in

1 that interval. And obviously there was an event where she
2 looked like she had been punched and then people described her
3 as gray and sweaty and retching, so obviously it happened
4 before that. But I can't tell you because that investigation
5 was not initiated.

6 Q. Well, at your deposition do you recall -- or your interview
7 it was -- do you recall telling me that you disregarded any
8 information that she was well on Sunday?

9 A. Yeah, I disregarded anyone describing that she was well,
10 given the fact that she -- that based on what I know about the
11 pathology and the history of an injury the day before.

12 Q. But do you recall reviewing information that she seemed
13 fine from her sister, for example, that she seemed fine on
14 Sunday morning?

15 A. I don't -- I -- I don't -- let's see, how do I say this?
16 Her observations may not have been -- taken into account all of
17 the facts.

18 And frequently what law enforcement -- unfortunately what
19 law enforcement will do is ask a question how did she seem or
20 was she okay, and then not ask the additional questions where
21 was she.

22 Frequently some of these kids have been punched in their
23 stomach and they're suffering from this injury, getting ready
24 to get sick and die, and they're sitting on the couch and
25 watching television, or, you know, drinking from a cup or --

1 you know, that seemed fine to a 13- or 14-year-old, but based
2 on her normal behavior may not have actually been fine at all.

3 So, given what I know about the pathology, and the fact
4 that it was not a -- necessarily a medically informed person
5 saying she seemed fine to her, I am not taking that as evidence
6 to contradict what I know from the autopsy.

7 Q. All right. Let me try to boil that down.

8 You did not incorporate that information or you did not
9 consider that information relevant in forming your opinion?

10 A. No, I considered it. I absolutely considered it.

11 Q. You disregarded it.

12 A. The evidence contradicts it.

13 Q. You're talking about the medical -- the microscopic
14 evidence.

15 A. All the evidence of how dehydrated she was, how much
16 inflammation there was in the retroperitoneum, how
17 disintegrated the tissue was, all of those things made it not
18 possible for her to have been fine.

19 Q. Okay. All right. Well, you would agree though that I -- I
20 think you agreed with me before in the deposition that in
21 general you -- and by "you" I mean your colleagues, your
22 profession -- try to be not too precise with this dating
23 because there is some variation, right? When you're trying to
24 date when an injury occurred that caused that?

25 A. Well, you're right. We talked about that.

1 I think His Honor said, you know, we were talking about
2 precision. So when we're talking about precision, when someone
3 were to say what does "fresh" mean, you know, 24 to 72 hours,
4 but when we're talking about what's possible and what's not,
5 then the pathology can really help you answer a yes/no question
6 "is it possible for her to have been fine on Sunday morning?"
7 no.

8 Q. One of the things I think you said to me was that you get
9 into some trouble when you start trying to divide 36 hours, 48
10 hours, and draw an arbitrary line of when an injury could have
11 happened?

12 A. That's because sometimes during trial if you say 36 hours
13 and somebody said could it be 35, could it be 34, could it be
14 33, obviously I don't have any idea about that. But what I can
15 say is the degree of pathological disintegration that was
16 present in the tissue makes that statement unreliable. So it's
17 not that I am disregarding it, I am taking into account, I'm
18 just saying that doesn't trump the pathology.

19 Q. The first documentation of her vomiting was on Sunday, you
20 would agree with that, right?

21 A. Yes.

22 Q. Prior to that, we have no documentation of her complaining
23 of any kind of abdominal discomfort, correct?

24 A. I thought she went to the ground after she got hurt and was
25 retching when she got hurt.

1 Q. And you're referring to the statement of Brandie Jones?

2 A. No, I'm talking about when the -- when she may have been
3 injured by the neighbor.

4 Q. You accepted that, you accept that statement as accurate?

5 A. It's consistent with the findings in the case, as opposed
6 to Brandie's statement not being consistent. I'm not saying
7 that that -- that I have proof that it happened, I'm just
8 saying there was a history that she went to the ground and that
9 people observed her to be gray and sweaty and unwell, and I
10 found that consistent with what you'd expect with a child who
11 was suffering from a condition that covers over the days prior
12 to her death.

13 Q. Okay. So --

14 A. As opposed to Brandie saying that she was perfectly fine --
15 or whatever words you used -- early in the day, that's not
16 feasible.

17 Q. So you accept that statement, the statement about her
18 falling to the ground because it's consistent with your
19 interpretation of the medical evidence, but the statement about
20 her being fine on Sunday you reject because it's inconsistent.
21 Am I accurately stating --

22 A. Yeah, I think that's fair. It's inconsistent with the
23 evidence.

24 Q. You were asked on direct if anything has changed about the
25 way you evaluate these injuries. Remember that? Since 1994?

1 A. Well, if any new science comes out or anything like that.
2 I mean, it's certainly been many years. I've had, you know,
3 three or four of these a year, so I've added to my knowledge
4 base since then. But the basic pathological principles of what
5 makes a child sick and what their timelines are and what
6 necrotic tissue looks like hasn't changed since 1992.

7 Q. One thing that has changed though that we also talked about
8 in your interview is I believe you told me that pathologists
9 today are more cautious about giving opinions relating to
10 timing than they were in the past. Is that still your opinion?

11 A. Oh, that, that, has to do with when I was reading
12 Dr. Seifert and Dr. Howard's testimony, three-fourths of their
13 testimony was looking at the pictures and having them estimate
14 how old the injuries were based on their eyeballing the colors
15 of the bruises. That is no longer done, ever.

16 So forensic pathologists, along with others who are
17 estimating age of injuries, know now that you are not allowed
18 to look or eyeball a bruise and render an opinion as to how old
19 it is. And those -- that testimony -- I mean it was hours and
20 hours and -- look, pages and pages of "that's two days,"
21 "that's three days," "that's one day," "that's," you know,
22 "less than 12 hours." That's all completely hogwash. And we
23 all know that.

24 Actually, I think the best article was the research article
25 that looked at the literature to verify whether that

1 information is reliable, and the last sentence in the abstract
2 is just don't do it.

3 Q. In your deposition though you weren't quite as limiting in
4 your answer, right? You just gave a general answer that
5 pathologists are more -- more cautious about timing injuries
6 today.

7 A. Well, I think --

8 Q. Do you remember that?

9 A. I didn't qualify it the way I am now, but that's what I was
10 talking about, is that the majority of the medical examiners'
11 testimony had to do with a parade of bruises.

12 Q. Let's talk about the evidence that you relied on that she
13 was ill the day before her death.

14 A. Okay.

15 Q. What witnesses are you relying on there? We've talked
16 about the alleged incident with the pry bar, or with the little
17 kid and the stick or the bar, whatever it was, but what other
18 witnesses placed her as sick? If you know from your memory.

19 A. I don't have a memory. I just remember there being an
20 event described the day -- that's within the time frame of this
21 injury and the nature of this injury, that there was an
22 altercation between the two children and that she suffered a
23 blow and she went down. That, in my opinion, is consistent
24 with the pattern of injury that we have here.

25 And from my reading of the testimony and the other

1 questions that were posed regarding that, there was a dismissal
2 of this being an accident, if you call it that, and an
3 altercation between two kids as not possible without any
4 scientific basis.

5 Q. Aside from that altercation, is there any other evidence
6 that you're relying on that she was ill before Sunday that was
7 in the record?

8 A. I don't -- I don't recall -- I don't recall the details of
9 when each of the statements about the onset of vomiting and so
10 forth. From what I recall, Ms. Gray wasn't available, the
11 other witnesses weren't necessarily clear or asked, and the
12 onset of vomiting appeared to be problematic on Sunday to
13 Mr. Jones.

14 Q. So, I guess, to answer my question, you can't point to
15 anything specific --

16 A. No, I don't think the investigation was adequate to
17 actually address the onset of symptoms.

18 People asked if she was okay, and people without knowledge
19 were not asked the subset of questions, which is, does she pee
20 on her own? does she drink on her own? does she get her own
21 foods from the fridge or does she ask for them? did she have
22 diarrhea? did she have constipation? what was she doing when
23 she was in the house? was she -- did anybody see her jumping?
24 Which is one thing a kid with this injury wouldn't do.

25 You know, there was no investigation, so having somebody

1 say she was fine doesn't mean anything. The onset of vomiting
2 is going to be later because that's when we get into the
3 peritonitis.

4 Q. You still haven't seen those questions answered, right, of
5 these people who were there? I mean, you still haven't --

6 A. Of course not.

7 Q. -- to this day. We don't know what the answers to those
8 questions would have been, right?

9 A. No, it's just there were assumptions made based on no
10 investigation that was scientifically proper, and then
11 determinations of the age of bruises based on what is now
12 completely discounted science, and very few questions about the
13 science of how old the belly injuries were and the kind of
14 symptomology that should have been explored given the time
15 interval that we're talking about here. It didn't happen on
16 Sunday, so when did it happen? One option is when she was in
17 the altercation with the little kid.

18 Q. She was reported to be -- at least she was -- there were
19 two children who witnessed her also in an altercation with
20 Mr. Jones on Sunday, too, right? That she was being struck by
21 Mr. Jones? So we have that event as well.

22 A. I was made aware of that, yes.

23 Q. So we have two potential -- assuming that you believe the
24 statement with the stick, right, assuming that happened, we
25 have that incident, but we also have an incident on Sunday

1 where she was being struck by the defendant and then started
2 showing symptoms that are documented immediately after. That's
3 what the record shows, does it not?

4 A. First of all, when I get -- when I get information, I want
5 to know if that information was properly collected, which it
6 was not. Putting little twin boys together in a room and
7 questioning them with their mom isn't --

8 Q. Well, let me just stop you there and ask you if you've had
9 any -- I mean, your qualifications are as a medical examiner,
10 right?

11 A. Are you suggesting that I can't interpret the history?

12 Q. You can give whatever weight you want to, but my question
13 is, as far as interviewing children and child interviewing
14 techniques, that's not your specialty, right?

15 A. Well, I am a pediatrician, so, yeah, I know how to do that.
16 I also am concerned about the reliability of any test, whether
17 it's a statement or whether it's a test done in a laboratory.

18 So let's go back to I am aware that the two little boys
19 said they saw something in the truck; I believe that was on
20 Sunday, is that correct?

21 Q. Yes.

22 A. I am aware of that, I have been aware of that all along.
23 And, like the statements by Brandie, if she was manhandled in
24 the truck, I can't exclude a mark or marks on her body from
25 that, if it occurred, that's not when her problem in her belly

1 began, and that is not when the problems with her anogenital
2 tissues began.

3 Q. Not when they began but they could have been reinjured that
4 day, you've already agreed to that?

5 THE COURT: Can you be clear? Because you're talking
6 about two very distinct types of injuries and you're conflating
7 them in your questions.

8 MS. GARD: Of course.

9 BY MS. GARD:

10 Q. The vaginal injuries could have been reinjured that day?

11 A. Theoretically. There is no evidence of fresh hemorrhage,
12 but I can't say that somebody didn't stick something in there
13 that day.

14 MS. GARD: I have nothing further. Thanks.

15 THE COURT: All right. Thank you. Redirect?

16 REDIRECT EXAMINATION

17 BY MS. SMITH:

18 Q. Just a few questions, Doctor.

19 The last question that you were asked, is there anything to
20 suggest that there was a new injury sustained on Sunday that
21 affected Rachel's abdominal injury?

22 A. No. There's no fresh blood, there's no -- anything to
23 suggest that a brewing injury was somehow aggravated.

24 Q. And you were asked some questions about whether you
25 considered certain witness statements and the investigation in

1 this case. Is it your opinion that you didn't have the
2 information that you said you would want about when Rachel was
3 last well in this case?

4 A. That's correct. All of the investigative information
5 focused on -- appeared to me to be focused on an assumption
6 that she was injured on the day that she was pretty much
7 exclusively in the care of Mr. Jones.

8 Q. And had there been a more thorough investigation by either
9 the police or the defense attorneys at the time, some of that
10 information may have been gathered?

11 A. Absolutely. It should have been under the direction of the
12 medical examiner to ensure that the proper time frame for the
13 injury constellation we have is covered.

14 Unfortunately, because of how things work, sometimes law
15 enforcement conducts their investigation separate and waits for
16 autopsy results or gets additional information. The way I work
17 with the -- have worked with the violent crimes team is I say
18 you have to wait 'til I see my slides to know when our time
19 frame is, and then then I'll tell you when we start the -- and
20 who -- what are the days that you need to be looking at in
21 terms of investigating. And then I give them a list of
22 questions that basically has to do with food, water, fluids,
23 toileting, sleeping, activity, all that stuff, 'til you fill it
24 in. And oftentimes you can find exactly when it happened by
25 doing a proper investigation.

1 Q. And that did not happen in this case.

2 A. No, it did not.

3 Q. You were asked some questions about some statements made --

4 I believe you might have been talking about statements by

5 Becky, Rachel's sister?

6 A. Yes.

7 Q. Not Brandie.

8 A. You're right. I get the two Bs mixed up.

9 Q. No problem. Is it possible that someone who is 10 or 11

10 years old, such as Becky, might not have been able to observe

11 that Rachel was sick due to the process of symptoms that we've

12 discussed?

13 A. Absolutely. I would not exclude the child being under the

14 weather based on the observations that a 10-year-old could

15 achieve. I mean, if she was flat out, she probably would have

16 noticed. But as we've spent, you know, a fairly detailed

17 discussion today, until she was at the end of her journey, she

18 might have been interactive and seeming fine to her sister.

19 Q. I'd just like to show you quickly Exhibit 81.

20 This is an interview with Isobel Tafe, who is one of the

21 neighbors in the trailer park. Could we scroll on to the next

22 page?

23 MS. GARD: Judge, I guess I would object as beyond the

24 scope of cross, but if I could have just a couple of questions

25 when she's done on this interview.

1 THE COURT: That's fine. Go ahead.

2 BY MS. SMITH:

3 Q. I believe you were asked, Dr. Ophoven -- just to clarify
4 what I am talking about -- which witness statements she
5 reviewed that were relevant to her opinion that Rachel looked
6 ill previously, and this is one of the documents that you
7 reviewed, correct?

8 A. Yes.

9 Q. Ms. Tafe here says that she saw Rachel looking grayish on
10 Saturday.

11 A. Yeah, she might be sick or something, and that she wasn't a
12 right color. Those are two pretty concrete statements. And
13 the gray color is kind of specific to this sort of process.

14 Q. Thank you.

15 One final question, I believe.

16 You were asked a question about the newer bleeding related
17 to the vaginal injury.

18 A. Yes.

19 Q. And whether it was possible there was a newer trauma
20 sustained.

21 A. Yes.

22 Q. Is it also possible that that was a result of DIC?

23 A. Absolutely.

24 Q. Or some other reagravation of an older injury?

25 A. Yeah, I had no other evidence that she had been re-wounded,

1 but I can't exclude the possibility that someone messed with
2 her. But there wasn't a retraumatizing to the point where it
3 was return.

4 Q. Just to confirm, your opinions about the ultimate timeline
5 in this case are based upon the pathology that you've reviewed,
6 the autopsy photos, your experience.

7 A. Yes, ma'am.

8 MS. SMITH: No further questions.

9 THE COURT: All right. We're going to take a brief
10 break before I let anybody else ask any questions because I
11 actually have some questions, but I want to take a moment to go
12 through my notes. We're going to take about a 10-minute break
13 and we'll come back.

14 Do you have your next witness ready to go?

15 MR. SANDMAN: Yes, he's here whenever --

16 THE COURT: What I'd like to do is try to go a little
17 longer today. I've got a conference call I've got to do at
18 1:00 o'clock that's going to take me from like about 1:00 to
19 1:30, so maybe we can go a little longer before lunch.

20 MR. SANDMAN: That would be great. He's here.

21 THE COURT: Great. Thank you. We're going to take a
22 10-minute break right now. We'll be right back.

23 THE WITNESS: Thank you, Your Honor.

24 THE COURT: Thank you.

25 (A recess was taken from 11:43 a.m. to 12:01 p.m.)

1 THE COURT: So I've got a few questions for the
2 witness, and then I'll give both sides a chance to follow up if
3 anything I have asked gives you reason if you want to follow
4 up.

5 EXAMINATION BY THE COURT

6 Q. I believe I read in Dr. Howard's report -- it may have been
7 his deposition, I am not sure -- that he said that this type of
8 injury was consistent with someone being in the equivalent of a
9 car accident going 35 miles an hour. What's your -- what's
10 your --

11 A. That kind of description is frowned on now. It's still
12 used by many, but it is describing biomechanics that really
13 don't apply to these kind of events. Someone who's been in a
14 terrible car wreck doesn't look like this.

15 So when we talk about the biomechanics of abdominal trauma,
16 you have to look at how much deformation of the belly there is
17 and how fast it goes. So we can all push on our belly slowly
18 and not end up with an injury, and push it all the way back for
19 skinny people 'til they can just about --

20 Q. Not all of us can do that.

21 A. And then others, where if it's a rapid deformation, if the
22 organ is attached to something or if it's full of gas, then the
23 dynamics are very different. So it has to do with loading and
24 whether it's impulse or whatever.

25 Q. I think you also testified that in this case it could have

1 been influenced by whether or not she had recently eaten and
2 had a full stomach.

3 A. Absolutely. Because if there was air in the area where the
4 impact occurred, it could have actually blown out. And given
5 the fact that there's very little bleeding in the tissues, that
6 may actually be a factor, because the amount of force that it's
7 going to take is so many variables that you couldn't possibly
8 duplicate it.

9 But what we can do instead of saying a "car wreck," is
10 handlebar injuries, falls, especially onto the belly or perhaps
11 onto something, seatbelt injuries, something where the
12 deformation -- it isn't so much the car wreck as it is a
13 seatbelted person with not the right kind of seatbelt. Perhaps
14 even in a scenario where it's the wrong size of seatbelt for
15 even potentially a roller coaster or something if you've got
16 the wrong dynamics going.

17 So the "falls from two-story windows" and the "car wrecks"
18 are language that was used before biomechanics were invited to
19 the table to analyze these cases. So, any more, I would be
20 surprised that anyone would use that on an abdominal case.
21 Although I do see it every now and then more from
22 pediatricians, where they're trying to say it's a God-awful
23 force, but it really isn't helpful.

24 In cases where you're trying to duplicate or wondering
25 about whether a particular accident could have occurred, before

1 you'd say it couldn't, then you'd want to go to a biomechanical
2 analysis, which you can do now, and actually look at various
3 scenarios to see --

4 Q. Was that being used at the time?

5 A. Not in 1992. And I don't think there would be a practical
6 application here because we don't really have an observed event
7 or we don't really know what could have happened. But when
8 someone says that another child couldn't inflict an injury,
9 you're talking about a ball of 35 pounds, plus or minus,
10 jumping onto the belly of a kid who's on the ground.

11 Q. When you're talking about a child, I think you may be
12 referring to the incident which we're talking about a
13 two-year-old child?

14 A. I don't know what age that child was. Thirty-five pounds
15 is a little much. So maybe a 25-pound kid jumping --

16 Q. I guess my question -- because I know in some of the
17 information I read in this case, and I think it was
18 petitioner's investigator and his investigation, there was a
19 suggestion that possibly there was some interaction with a
20 two-year-old child and that this could have been the cause. So
21 I guess that begs the question: Could a two-year-old child
22 exert the force necessary to cause this type of injury?

23 A. Sure. Depending on the scenario. Obviously, if he's
24 standing there and takes his little fist and punches her in the
25 stomach, I'd say, well, that's not going to cut it for me. But

1 depending what they were doing, what he was using, what her
2 posture or position was. I've had so many cases where kids are
3 jumping off of bunk beds onto their siblings and still people
4 dismissing the idea that kids hurt kids.

5 So the question, key question, is what are we talking
6 about? what is the scenario? For me, the answer is, "can a
7 child hurt or kill a child?" the answer is absolutely.

8 Q. You'll have to forgive me, these questions kind of jump
9 around because I'm touching on parts of your testimony.

10 We had one slide in which you were looking at the deep
11 layer underneath the skin and you indicated that that supported
12 the conclusion that some of the red marks on her chest were not
13 caused by trauma but just the death process.

14 A. Yes.

15 Q. For lack of a better word.

16 A. Yes.

17 Q. In that particular picture it was just pulled back on, I
18 believe, her left, left side.

19 A. There were two of them.

20 Q. So was it also pulled back on the other side --

21 A. Yes.

22 Q. And did that reveal any additional trauma --

23 A. No.

24 Q. -- particularly -- okay. It did not?

25 A. No.

1 Q. So both sides.

2 A. Clean.

3 Q. And I know you've touched on this several times, but I just
4 want to make sure I understood.

5 You said the vaginal injury you were measuring in terms of
6 weeks, not discounting the fact that it could have been
7 aggravated again, but the majority of the injuries looked like
8 they had been there for a longer period of time, did not occur
9 the day before.

10 A. Absolutely not.

11 Q. Another doctor in this case testified yesterday that some
12 of the newer blood could have also resulted not from trauma but
13 just from poor hygiene.

14 A. With -- with one degree of separation. Poor hygiene can
15 lead to -- can lead to inflammation and irritation in the area,
16 and then the child may actually scratch and be uncomfortable
17 and self-injure the tissues. Because a lot of that injury was
18 on the outside. So the injury itself could lead her to cause
19 some bleeding into it, which is a degree of separation from
20 hygiene.

21 The other thing is that in the past, depending on who
22 changed her pants or if she ever had anyone change her pants,
23 if someone's helping her with a mess or she had diarrhea, the
24 cleaning up of that area could certainly aggravate bleeding
25 into the wound.

1 Q. Focusing on the small intestine injury, again, I want to
2 make sure I understand, you think it happened at least two days
3 before?

4 A. Yes.

5 Q. Possibly longer.

6 A. Two to three days, yes, or more.

7 Q. Two to three days or more.

8 A. Yes.

9 Q. All right. You -- I believe there was some testimony that
10 that weekend, maybe even Sunday, she may have been riding a
11 bike, did you recall reading anything like that?

12 A. Yeah, that she was outside, that she was outside for a
13 period of time. I don't know what exactly she was doing. What
14 I could say is that if she had gone outside, because that's
15 where Barry was or something, and then she was sitting on a
16 bicycle, that's one thing. If she felt like going whoopee up
17 and down the driveway, wildly cycling, I would consider that to
18 be inconsistent with the injury -- injuries that I know she
19 suffered. So I am not sure, the first thing I'd do is get more
20 information about the being outside bicycling question.

21 Q. That leads me to a related question, which is you've talked
22 about that there are symptoms that manifest themselves that are
23 consistent with that small intestine injury.

24 A. Yes.

25 Q. My question is are those symptoms that -- can they be

1 missed?

2 A. Yes.

3 Q. In your experience with these types of injuries, how
4 frequent is it that these symptoms are missed?

5 I want to make a distinction between that and the actual
6 examination by the doctors. Because I know you said even when
7 you're using ultrasound to look for some of these injuries,
8 unless you know what you're looking for, you might miss it.
9 But I am talking about the manifestations that caregivers might
10 see that would put them on notice that there is something
11 wrong. How often would this -- if you can testify to this, how
12 often would this type of injury or those symptoms missed?

13 A. It's missed -- it's missed frequently. It's not
14 interpreted as as serious as it goes on to become until the
15 catastrophe manifests itself; in other words, until it moved
16 into her abdominal cavity.

17 And as a fact from my experience, I've had these children
18 come in to see physicians and have an exam in the office,
19 without looking for a duodenal injury, and without a CT scan or
20 ultrasound, tell them, pat them on the head and tell them it's
21 the flu, send them home, and they're dead the next day.

22 Q. You talked about -- I think the term you used was purging
23 upon death, which I think your testimony was it's pretty
24 common, if not pretty regular, that there's purging in the
25 mouth and the nose.

1 A. Yes.

2 Q. And that that could explain what happened -- that could
3 explain the collection of blood and material in her ears as
4 well?

5 A. Yes.

6 Q. Do you know from your review of the files whether or not
7 she was cleaned up, those orifices were cleaned before the
8 photos were taken in this case?

9 A. No, I don't. I don't know what happened to her before she
10 got rushed out to the vehicle. I don't know what happened in
11 the emergency room while they're examining her. It looked like
12 there might have been a line on one of her cheeks, and I'm not
13 sure where it was, but I thought it might have been in the ER.
14 So I don't know the answer to your question. The simple answer
15 was no, I don't know.

16 Q. You testified that it is no longer standard procedure for
17 physicians to try to age bruising based upon, you know, gross
18 observations of bruising, when did that change? Or more
19 specifically, was that the standard at the time of this case?

20 A. I don't think -- I can't speak for the population, I can't
21 speak for Dr. Howard, I've always been personally cautious in
22 doing that, but it was well after 2000 that the papers became
23 dogmatic about it's not done.

24 So I think how Dr. Howard did it was based on a chart that
25 used to be published in a legitimate forensic text that talked

1 about colors. You know, if it's green, it's this old, if it's
2 brown, it's this old, if it's yellow, it's this old. And some
3 people believed that, not realizing that it had never been
4 tested. And then it was finally tested and then we stopped
5 doing that.

6 Same thing with aging bone fractures and some of these
7 other things, is that what we thought was true isn't.

8 But it was well past when the original trial occurred.

9 Q. All right. Finally, there has certainly been evidence in
10 the case, and I think it's the Lopez twins that you had
11 referred to earlier that saw what additional trauma to -- to
12 Rachel in this case. If, in fact, that's what they saw, could
13 that trauma have accelerated the process in Rachel's case?

14 A. Assuming this occurred on a Sunday, and I believe it was
15 after noon --

16 Q. Yes.

17 A. -- she was on her way to dying at that time. So the
18 peritonitis was already happening.

19 Q. So if what they saw, in fact, happened, would that have
20 accelerated or exacerbated --

21 A. I don't know how, but I can't say it's a good thing to
22 punch someone in the stomach who's got a hole in their belly,
23 but it didn't cause it. And she was on her way to dying, based
24 on the time frame that I understand that event to have
25 occurred, she had already developed peritonitis.

1 THE COURT: Thank you. Those were the questions I
2 had.

3 We'll start with respondents and give you an opportunity to
4 ask any additional questions, and then I'll turn to
5 petitioners. Anything I asked?

6 MS. GARD: We don't have anything, Judge.

7 THE COURT: No additional questions. All right.
8 Petitioners?

9 MS. SMITH: Just briefly, Dr. Ophoven.

10 FURTHER EXAMINATION

11 BY MS. SMITH:

12 Q. Back in 1994, would you have been a bit more cautious than
13 Dr. Howard in dating bruises?

14 A. Yes.

15 MS. SMITH: And then I don't have a question, but I
16 just wanted to clarify for the record in response to one of the
17 Judge's questions, I only showed one of those autopsy photos
18 that you were asking about, but those are Photos 896 and 897.

19 THE COURT: I accept what she said, that she saw both
20 sides of that, of Rachel's chest. I understood. I don't need
21 to see the other photo.

22 MS. SMITH: Okay. Great.

23 THE COURT: Anything else?

24 All right. Okay. Thank you, very much, Dr. Ophoven. We
25 appreciate your testimony. You may be excused.

1 DR. OPHOVEN: Thank you, Your Honor.

2 THE COURT: I am prepared to break for lunch. So
3 you'll have an hour and 15 minutes for lunch, if that's okay
4 with you. Then we'll just -- we'll start at 1:30. All right?
5 Thank you, very much. We'll be in recess.

6 (A recess was taken from 12:17 p.m. to 1:37 p.m.)

7 THE COURT: Your next witness?

8 MR. SANDMAN: Paul Gruen, Your Honor.

9 THE COURT: If you'd please come forward, stand in the
10 witness box, and Madam Clerk will swear you in.

11 **PAUL R. GRUEN, WITNESS, SWORN**

12 THE COURT: Is that an Albert Einstein tie?

13 THE WITNESS: Yes, sir.

14 THE COURT: Okay.

15 THE WITNESS: I get a lot of compliments on it.

16 THE COURT: That was intended as a compliment.

17 Mr. Sandman, go ahead.

18 DIRECT EXAMINATION

19 BY MR. SANDMAN:

20 Q. Would you state your name for the record, please.

21 A. My name is Paul, middle name Robert, Gruen. That's
22 G-r-u-e-n.

23 Q. Mr. Gruen, do you have an occupation?

24 A. I do, yes.

25 Q. What is it?

1 A. My job currently is I run a private automobile accident
2 collision reconstruction business out of Sierra Vista, Arizona.

3 Q. I'd like to ask if we could pull up your CV in Exhibit 109.

4 Do you recognize this as your CV?

5 A. Yes, sir.

6 Q. If we could blow up the first section there, the Summary of
7 Qualifications.

8 Could you tell us, when did you first begin working in the
9 area of accident scene investigation and reconstruction?

10 A. Well, I retired from the Arizona Highway Patrol back in
11 2002, and on March 1st of that year, I went into business as a
12 private accident reconstructionist.

13 Q. It looks like, from your CV, that you started with the
14 Arizona Highway Patrol in 1984?

15 A. Yes, sir, that's correct.

16 Q. And did you work for another law enforcement agency prior
17 to that, also working in the area of scene reconstruction?

18 A. Yes, I did. I worked for six and a half years with the
19 Cochise County Sheriff's Department.

20 Q. Then 12 years in private practice doing the same type of
21 work?

22 A. Yes, sir. At that time it was 12 years, yes.

23 Q. Have you received any type of an accreditation in your
24 field?

25 A. Yes. Back in 1993, when I was still a Highway Patrolman, I

1 took a nationwide exam to become an accredited
2 reconstructionist. It was referred to as the ACTAR
3 certification exam, and that stands for the Accreditation
4 Commission for Traffic Accident Reconstruction.

5 Q. Okay. Have you had to receive additional training over the
6 years to maintain that accreditation?

7 A. Yes, sir. I am required to maintain 80 credit hours over a
8 five-year period of time, so that means generally every year I
9 am attending some form of training.

10 Q. Could we look at Page 6 of the CV? Maybe just enlarge the
11 top half of the page there just so we get an idea what this is
12 all about.

13 So on this part of your CV, you talk about studies and
14 field testing. Generally what are we talking about there?
15 What are you doing commensurate with that?

16 A. Yes, sir. In that particular part of my CV is either
17 testing that I've done or that I've been involved in or been
18 witness to during one of our seminars.

19 So I'll attend a training, we may do some staged rollovers,
20 or different manners of pedestrian collision analysis, where we
21 actually put dummies on bicycles and hit them with a car, that
22 kind of thing. So most of these are studies that I've been in
23 attendance to, and there is actually I think one or two studies
24 I may have actually been involved in directly.

25 Q. Let's take a look at the next page.

1 Are you a member of any professional associations?

2 A. Yes, sir. I am a member of the Southwestern Association of
3 Technical Accident Investigators, which was a group that was
4 started here in Arizona, way back. I believe it was in the
5 '80s. I eventually worked my way up to the president in 2015,
6 and now I am a past president, but they've managed to keep me
7 back on the board. So I am a board member in the SATAI group
8 as well. And then I'm an associative member of the Society of
9 Automotive Engineers.

10 Then there is a couple of online, if you will, e-mail type
11 locations where a lot of experts talk among each other and pass
12 ideas and such, and I am a member of a couple of those as well.

13 Q. And have you spent a lot of time actually as an educator or
14 trainer in your field?

15 A. Yes, sir. When I was with the Highway Patrol, I was
16 detailed to -- at the time, the academy was here in Tucson, and
17 I was a regular instructor in the police academy for automobile
18 accident investigation. When I went into private practice, I
19 was hired, I'm going to say three times, to teach advanced
20 accident investigation on Fort Huachuca to the military police
21 and the Department of Defense police as well.

22 Q. Have you, during the course of your career as a public
23 officer and in your private capacity, provided expert testimony
24 in the field of accident reconstruction?

25 A. Yes, I have.

1 Q. And you've been qualified to do so in court proceedings?

2 A. Yes, sir. In all the courts I've been in, I was qualified.

3 Q. Somewhere in your CV you've identified those cases, at
4 least current through the time of this CV?

5 A. Yes, sir, current as of the time of this CV, that's
6 correct.

7 MR. SANDMAN: The parties have stipulated to the
8 qualifications of the experts, Judge.

9 BY MR. SANDMAN:

10 Q. Can you tell us, Mr. Gruen, in the field of accident
11 reconstruction, what is a line of sight investigation?

12 A. Typically a line of sight investigation, as we typically
13 handle that type of analysis, is basically what it is that
14 people can see, and we look at that from the aspect of human
15 factors. So is there a recognition, can the person see, or do
16 we have issues such as trees or buildings that might be in the
17 way of a person's line of sight. And what can they tell -- and
18 when should they have possibly seen a hazard or detected it,
19 that's what a line of sight issue is.

20 Q. The line of sight aspect of a scene reconstruction, is that
21 a fairly common place, sort of component, of the typical scene
22 reconstruction?

23 A. Yes, sir. When you have an accident, you kind of break it
24 into two parts. One is the crash part. And then we also want
25 to know what occurred prior to that, and do the drivers have

1 the ability to see and respond to the stimulus, or whatever it
2 is. Lighting at night, was a pedestrian visible in the
3 daytime, that kind of thing.

4 Q. Would you at times also evaluate what a bystander or
5 pedestrian could see in terms of the traffic or the vehicles?

6 A. Yes, sir.

7 Q. So typically when you're doing a line of sight
8 investigation, is what you're telling us that you're looking at
9 what happened prior to the actual collision?

10 A. Yes, sir. We're trying to get to if a person says that
11 they were able to see something from some distance, the goal is
12 to go to that distance and try to see if they observed what
13 they said they did. There could be a hill in the way, there
14 could be a tree in the way. So that's what you're looking for
15 initially.

16 Q. Okay. And as part of that process, you're looking at
17 eyewitness reports, is that right?

18 A. Yes, sir, that's correct.

19 Q. Now, were you asked by the Arizona Federal Public
20 Defender's office to provide a reconstruction and technical
21 analysis of the alleged eyewitness reports of Ray and Laura
22 Lopez?

23 A. Yes, sir.

24 Q. They were the two eight-year-old twins who reported seeing
25 a man in a yellow van assaulting a child while driving into the

1 Choice Market parking lot on May 1, 1994?

2 A. Yes, sir, that's correct.

3 Q. And did you accept that engagement?

4 A. I did, yes.

5 Q. Was the investigation designed to determine whether it
6 would have been possible, physically possible, for the twins to
7 have seen what they reported seeing?

8 A. Yes, sir, that was the gist of what we wanted to look at.

9 Q. As part of that investigation, was a component of that what
10 you've just described as the line of sight type investigation
11 you would typically conduct?

12 A. Yes, sir, that's correct. It's a placement of trying to
13 place where the witnesses are and what could they see at that
14 particular location.

15 Q. Did you prepare a report in connection with that
16 engagement?

17 A. Yes, sir, I did.

18 Q. Could we see Exhibit 110 at Page 23?

19 Is this first page of your report?

20 A. Yes, sir, that's the cover sheet.

21 Q. Then the next page. If you could just maybe blow up the
22 top half there of that page. Down below Opinion, if you could
23 get it there.

24 So we're looking at the first narrative portion of your
25 report describing a summary, and then you have an opinion on

1 that third paragraph. Can you tell us what that opinion was.

2 A. Yes, sir. My report reads: Based on my review,
3 examination, and analysis of the issues in this case, my expert
4 opinion at this time is that the children could not have seen
5 inside the van, nor observed any of the activities to which
6 they testified, based on their angles of observation, visual
7 obstructions, speed of the van, and duration of the event.

8 Q. Okay. And we'll talk about how you came to that finding as
9 we go along.

10 The next portion of the report I want to talk about is at
11 the bottom, begins at the bottom of the page, under Materials
12 Received & Reviewed. You list various materials that you've
13 received and reviewed there as part of the engagement?

14 A. Yes, sir, that's correct.

15 Q. Then the next section of your report deals with the site
16 inspection. Could you sort of walk us through that portion of
17 your report that deals with the site inspection and tell us
18 what you did.

19 A. Yes, sir. So, for the most part, I came up to Tucson and
20 went to the scene, and I took an overall look at the scene,
21 walked around, took photographs, and also took measurements at
22 the scene to give me an idea of what -- for the most part, what
23 was existing at the time of the event. However, there were
24 changes made to the parking lot, which is trying to figure this
25 part of the scene inspection. So does it match the scene on

1 that particular day. And then I took measurements to help me
2 scale the aerial photographs that I took from Google Earth,
3 Google Maps.

4 Q. Did you prepare some exhibits that are appended to your
5 report that describe that process?

6 A. Yes, sir, I did.

7 Q. Let's take a look first at Exhibit 1. It's Page 29. If we
8 could just blow up the top half.

9 Could you describe what we're looking at in Exhibit 1.

10 A. So this is an aerial map, a cut-out from Google Maps,
11 showing the location of the Choice Market. And the top of it,
12 of course, is oriented north. Then I've got the street names.
13 So you can see Benson Highway, you can see Drexel Road, and
14 then you can see Earp Avenue. In the center, I put a label on
15 top of the building that says the "Choice Market."

16 Q. Okay. Then could we go to Exhibit 2.

17 Did you, as part of your review and analysis, review
18 statements made by Ray and Laura Lopez?

19 A. Yes, sir, I did.

20 Q. Did they describe in those statements the path of the
21 vehicle, where the vehicle came from, the yellow van that they
22 said they saw?

23 A. They didn't describe the exact path, but they did indicate
24 in their statements that the van came from behind Earp or came
25 from behind the Choice Market, and then made a turn north, if

1 you will, and traveled across the parking lot.

2 Q. Okay. So we're now looking at Exhibit 2 and there is some
3 yellow rectangles. What do those depict then?

4 A. The yellow rectangles are just the position of the van, and
5 then what I did was I put a dotted path line showing the van
6 traveling. So the dotted line shows the van coming from Earp,
7 or coming from the intersection of Drexel and Earp, and running
8 around into -- through the parking lot.

9 Q. I am going to you ask you a little bit more in detail
10 later, but I want to ask you just preliminarily, if you move
11 the path of the vehicle either to the -- I guess that would be
12 to the west, or further to the east -- would that affect your
13 ultimate opinion in the case?

14 A. No, sir.

15 Q. Now, let's go back to Page 27. Twenty-six. I'm sorry. At
16 the top, still at the top of the page. There you go.

17 Now, did you also obtain some information from the trial
18 record as to the approximate location of the children when they
19 said they saw the van?

20 A. Yes, sir. There was an exhibit that came in, a photograph,
21 where I believe Ray Lopez indicated they were when they saw the
22 van.

23 Q. Okay. Can we take a look at Exhibit 66, please?

24 Sixty-four.

25 THE WITNESS: I'm trying to get my chair to lock,

1 Judge. I can't get it to lock.

2 THE COURT: Yeah, I haven't had a lot of luck myself.

3 MR. SANDMAN: Can we see the picture?

4 THE COURT: Hold on for one second.

5 Madam Clerk, do you know if there's a way to lock that
6 chair from bending back?

7 (Pause in the proceedings)

8 MR. SANDMAN: Your Honor, for the record, here in
9 Exhibit 66, in this case, was Trial Exhibit 199.

10 BY MR. SANDMAN:

11 Q. Mr. Gruen, so tell us, was this the photo that you relied
12 on for identifying the location of the children in the parking
13 lot of the Choice Market?

14 A. Yes, sir, that eventually became the photograph that I
15 used.

16 Q. Can you tell us what we're looking at there, in terms of
17 where you understood that Ray was saying that they were
18 standing?

19 A. We're basically looking at -- the white portion of the
20 building you see is the front. So we're actually looking sort
21 of in a southerly direction from the actual asphalt parking
22 lot. So we're looking south. And then what you see is, I
23 believe, Mr. Lopez drew a small vehicle with an arrow, and then
24 there is two tick marks indicating where he was standing with
25 the black marker he marked. But we're basically looking south

1 from the parking lot.

2 Q. So the arrow at the bottom portion of the photo, that was
3 drawn by Ray Lopez to indicate where the yellow van went after
4 it passed them by?

5 A. Yes, sir, that it pulled up into that parking space there.

6 Q. Okay. And then he drew what looks like is supposed to be
7 the vehicle with four wheels on it there? Up above that?

8 A. Yes, sir.

9 Q. And then the two little black lines were he and his sister.

10 A. Yes, sir.

11 Q. Can we take a look at Exhibit 3 to Exhibit 110? I think
12 that's at Page 30. If we could just blow up Exhibit 3.

13 So what did you do in order to create this map and diagram
14 that we're looking at in Exhibit 3?

15 A. In order to create this diagram, I obtained an aerial image
16 of the Choice parking lot, and I cut it out of a Google Maps
17 display. And then I scaled the photograph. I usually capture
18 a scale bar off the map and I scale the photograph. And then
19 what I did was I inlaid the measurements that I took at the
20 scene into the map itself as part of a check process, as well
21 as giving me the information that I took at the scene.

22 Q. Then you have various distances or measurements indicated
23 on Exhibit 3. Can you tell us what those are.

24 A. Yes, sir.

25 Starting at the very top, there is a 65.9 or 66-foot

1 measurement that I took which was across the parking lot, the
2 asphalt paved portion of the parking lot. That's showing the
3 width over all generally. Then I took a measurement in between
4 the parking spaces or the center area between the parking
5 spaces, which was 28 feet.

6 Then I took a measurement from the fence line to a light
7 pole that was located in the parking lot, which was the
8 southern most light pole. I took one from the fence to the
9 pole and then from the pole to the -- it's kind of an
10 embankment now. That area has changed from the date of this
11 incident, but it was an embankment. That was 50 feet.

12 Then what I did was I went out to the asphalt edge of the
13 pad from the light pole, which was 28 feet.

14 And then there was information that the -- I tried to look
15 at the photograph and position the children according to where
16 they said they were. Plus there was some information about --
17 I believe Ray said they were maybe 20 feet from the van. But I
18 placed the witnesses in the best position I could do from the
19 photograph and the information I had. So you're seeing a mark
20 that says 26 feet, but that's from the center arrow of the
21 parking lot.

22 Q. Is part of what you were trying to do there was to create
23 an approximation based on Exhibit 64 that we looked at, in
24 terms of where Ray said they were standing?

25 A. Yes, sir, that's correct.

1 Q. So my question -- again, this is a preliminary question and
2 we'll talk about the reasons for it later. But if you were to
3 move the children around the parking lot, further north,
4 further south, further east, further west, the change of the
5 location of the children, would that affect the ultimate
6 conclusions that you drew in the case?

7 A. No. The positioning of the children anywhere in the
8 parking lot does not change my -- my opinion at all.

9 Q. Are you still dealing with the same size children?
10 Wherever the children are, they're the same size, correct?

11 A. That's correct, yes.

12 Q. And wherever you put the children, the van and the
13 dimensions of the van are the same size.

14 A. Those all stay the same, that's correct.

15 Q. And wherever you put the children in the parking lot, are
16 the occupants of the vehicle the same size?

17 A. Yes, that's correct.

18 Q. So wherever the children are, the dimensions of the people
19 in the vehicle are the same, correct?

20 A. Yes, that's correct.

21 Q. Now, did you also, as part of your site inspection --

22 THE COURT: Can I interrupt you? I am not sure I
23 understand your question. You're saying the dimensions of the
24 people in the van are always the same no matter where you place
25 the witnesses?

1 MR. SANDMAN: I am saying that there are some fixed
2 variables. The size of the children, their height, is a fixed
3 variable. The height of the van is a fixed variable. The size
4 of the child said to be in the van is the same. She is not
5 getting bigger or smaller. She is a fixed height sitting in
6 the seat. Mr. Jones. So the variables of the occupants of the
7 van, the van itself, and the height of the children.

8 So you could put the kids...I'm pointing to the left side
9 of the courtroom...and they still, from that height, have the
10 ability to look inside the van and see something. You could
11 put them on the other side of the courtroom or you could put
12 them up where Your Honor is sitting. They described a van
13 coming by them and passing them. So wherever they are on a
14 flat surface -- and I should allow Mr. Gruen to explain this,
15 I'm sorry. But they're on a flat surface, and wherever they
16 may be standing, trying to look inside a vehicle as it passes
17 them by, they either have the same advantages or disadvantages
18 of seeing up inside that vehicle.

19 That's what I was trying to establish by those questions.

20 THE COURT: Sure. Doesn't Exhibit 3 indicate that
21 it's not a static surface though, that there's at least a
22 slope?

23 MR. SANDMAN: I can ask the witness.

24 THE COURT: Yeah.

25 BY MR. SANDMAN:

1 Q. Was there a slope on the entryway there?

2 A. Yes, sir. I measured a bit of a down slope going into the
3 parking lot, so there was a bit of a slope, but it's very close
4 to being level. It was only about a 3 percent slope. But the
5 angle of the viewer on the slope -- in other words, they're on
6 the same plane, so even if we elevate the plane or we dip the
7 plane down, whichever direction, their view angle is the same,
8 that doesn't change. Regardless of whether we move the slope
9 up -- like a teeter-totter in a way -- move it up and down,
10 that doesn't change.

11 So the slope doesn't change --

12 THE COURT: As long as both objects are on the slope.

13 THE WITNESS: That's correct, sir.

14 THE COURT: If the object isn't on a slope then it
15 would make a difference.

16 THE WITNESS: That would make a difference. But as
17 long as they're on the same plane or slope, then it doesn't
18 change it, that's correct.

19 THE COURT: Go ahead.

20 BY MR. SANDMAN:

21 Q. Did you make some effort to estimate the speed of the
22 vehicle?

23 A. Yes, sir, I did.

24 Q. How did you do that?

25 A. I actually went back to the scene and I brought my own

1 vehicle and I did what we commonly refer to as a drive-through
2 of the scene. And I drove through the scene several times at
3 different speeds and found a speed I thought was reasonable.

4 And then also during my scene visits, when I was at the
5 scene, vehicles would drive through the lot, so I was able to
6 make some judgment about the vehicles driving through as well.
7 But the primary way I did it was just simply drive my vehicle
8 through until it started shaking so bad that I deemed it wasn't
9 a reasonable speed to go through the parking lot.

10 Q. What did you deem a reasonable speed in the parking lot
11 would be?

12 A. I came up with a speed range of about 15 to 20 coming into
13 the back side of the parking lot and driving across the dirt.

14 Q. If you were to slow the vehicle down to, let's say, five
15 miles per hour going through the parking lot, would that have
16 altered your ultimate opinion in the case?

17 A. No, sir. The speed plays no role in that issue.

18 Q. I want to take a look again at Page 26, under the Vehicle
19 Inspection portion of your report. Could you tell us, what did
20 you do in terms of inspecting the vehicle?

21 A. I went to the sheriff's department, where the vehicle was
22 located, and the first thing I did was I had them move it out
23 of the parking area, where there's vehicles next to it, so I
24 could get around it, and I had to move it into the center of
25 the parking lot. From there, I started taking photographs

1 around the vehicle in just general terms, general photographs.

2 Then, from there, I set up a steel tape on the ground and I
3 measured a distance of 20 feet and a distance of 10 feet. And
4 I also positioned my camera at the height of the children, of
5 49 inches, and positioned my camera and took a series of photos
6 from kind of an offset photo of the front of the van, and
7 worked my way around at 20 feet, and then I moved up to 10 feet
8 and took offset photos of the van there as well from the
9 49-inch position with my camera.

10 Q. And you're taking pictures at different locations, which
11 attempted to depict what the van would look like at various
12 stages coming toward them and passing by them?

13 A. That's correct.

14 Q. Let's look at some of those exterior photos, starting
15 with -- let's see. That would be Exhibit 110A. Starting with
16 PDF Page or 38 -- Page 38 of that exhibit.

17 What are we looking at there?

18 A. That is an offset photograph of the van from 20 feet.

19 Q. Can we take a look at Page 72.

20 What are we looking at there?

21 A. That is an interior photo I took with a ruler placed inside
22 the photograph depicting the heights of the seat and primarily
23 the cut-outs of the fabric in the seat.

24 Q. Did you calculate where Rachel would be -- that's the
25 passenger seat?

1 A. Yes, sir.

2 Q. Did you calculate where she would be, where her head would
3 be, likely be, sitting in that seat, based on her height?

4 A. Well, I didn't calculate it. I looked up reference
5 material on the internet and with published -- publications to
6 get the sitting height of the child in the seat.

7 Q. And what was the sitting height?

8 A. I had a couple of different measurements, but I came up
9 with a mean of about 21.6 inches, and that's if the person is
10 sitting straight up in the seat. It's 21.6 from the base of
11 the seat up.

12 Q. So if she's sitting up totally erect?

13 A. Exactly. That's correct.

14 Q. Where would that be on this photograph?

15 A. It would actually be slightly -- around the number 9 or the
16 number 10 on the ruler that you see. So it's slightly above
17 the cut-out area of the cloth.

18 Q. And that would be approximately, if she's sitting up
19 straight, where the top of her head would be?

20 A. Yes, sir, that's correct.

21 Q. So let's go back to --

22 THE COURT: Is that nine or ten inches?

23 THE WITNESS: Yes, sir. That's correct. Nine or ten
24 inches.

25 THE COURT: The upper portion of her torso is nine or

1 ten inches, and that's as high as it would go?

2 THE WITNESS: No, sir. From the sitting position
3 where the ruler is based at the seat all the way up to -- so
4 it's one-foot-nine or one-foot-ten. It comes out to 21.

5 THE COURT: I missed the other 12 inches. I'm sorry,
6 go ahead.

7 BY MR. SANDMAN:

8 Q. Can we go back and look at Page 38?

9 I know you've already described this, but just describe it
10 again.

11 A. So we're looking at sort of an offset of the van at 20 feet
12 from the camera, and looking up at -- from a height from the
13 ground of 49 inches on the tripod.

14 Q. Let's see the next one at Page 39.

15 So now the van -- you have the van sort of as if the
16 children are standing and looking at the moving van, it's now
17 moving -- beginning to pass them?

18 A. Yes, from a right-to-left position. I moved my tape
19 counter clockwise and took a picture 20 feet again to the van
20 at an elevation of 49 inches.

21 Q. You're holding the camera at 41 inches. Did you
22 determine -- did you have any records showing what the height
23 of the children were?

24 A. Yes, sir. It was 49 inches. And I had not only some
25 published data, but I also obtained or someone sent me the

1 information on Ray Lopez's height, and that was 49 inches. So
2 the camera is on a tripod, that's the thing to remember, and
3 that it's elevated by a ruler up to the height of that 49.

4 Q. I notice that those tires depicted in the picture are flat,
5 so that the van is actually lower than it would be if the tires
6 were inflated.

7 A. That's correct, yes.

8 Q. Did you make an adjustment for that?

9 A. Yes, sir. I checked the -- there was tire measurements,
10 and it came out to about a four-inch height adjustment, four-
11 to five-inch height adjustment if you inflate the tires. So
12 that elevates the van another four or five inches.

13 EXAMINATION BY THE COURT

14 Q. You said you set the camera on the tripod at 49 inches? Or
15 did you make an adjustment for their eye level? Because 49
16 inches would be the top of their head, wouldn't it?

17 A. Yes, sir, that's correct. I estimated the 49 to be at the
18 top of their head, because at the time I wasn't sure exactly
19 the height, so I figured a little higher would be better
20 because --

21 Q. You set it at the top of their head?

22 A. Yes, sir, that's correct.

23 Q. So, in addition to the air in the tires, which you say
24 would make up a four-inch difference --

25 A. Yes, sir.

1 Q. -- are you saying that you think, in reality, the 49 inches
2 is too high?

3 A. No, sir. The 49 inches is within that range. So because
4 at the time I didn't know what their eye level was, I went
5 ahead and went to the top of the head of the child, and then
6 we're raising the van an additional amount. But at that time I
7 didn't know exactly where their eyes were located, so I opted
8 to go to a higher setting simply because it would be easier for
9 them to see in the van at that higher setting. The lower I go,
10 the --

11 Q. I understand, but are you saying that, in reality, their
12 view wouldn't be from 49 inches, it would be from something
13 less than 49 inches? That's my question.

14 A. No, sir. They would be 49, and then I would have to adjust
15 the elevation of the van so it would be the same. This picture
16 depicts that the van is lower.

17 Q. So you're saying that without the tires inflated, and
18 because of the higher height of the camera on the tripod, this
19 is, most likely, the view they would have had?

20 A. No, sir. I am saying that this is the low view for -- the
21 children, the height is correct. The van height is not
22 correct.

23 Q. No, I understand that. Maybe I'm not being clear. You
24 said you set the camera at 49 inches, which is at the top of
25 the head. That's certainly not the same view they would have

1 had, because their eyes aren't on the top of their head?

2 A. Correct. So your eyes are a couple inches below your
3 actual view level, but I made the assumption that I would be
4 close to eye level because at the time I didn't have the exact
5 height when I took these pictures.

6 Q. Okay.

7 A. If that's --

8 Q. I'm not sure -- I'm not sure -- let me try it one more
9 time.

10 I understand that the van is, what you're saying, is four
11 inches lower because the tires are flat. If the tires were
12 inflated, I thought I understood you to say it would be four
13 inches higher.

14 A. The van would be raised four inches, yes, sir.

15 Q. Now, the children, their height was 49 inches?

16 A. Yes, sir.

17 Q. At the top of their head.

18 A. Yes, sir.

19 Q. And you set the camera at 49 inches.

20 A. Yes, sir.

21 Q. But, in fact, their eye level is a few inches below that,
22 is it not?

23 A. Yes, it's actually below that, yes.

24 Q. So that would actually -- so it would have an impact on
25 what they could see.

1 A. In that regard, with the tire being the way it is, the
2 tires being flat, it would have an impact, yes. But not enough
3 to make a difference.

4 Q. Well, but if the tires add four inches and the eye level
5 adds two inches, are you telling me that there is as much as
6 six inches in difference from what you're seeing here?

7 A. No, sir, the eye level is down. So we go from the top of
8 the head down to eye level, so that lowers it.

9 Q. Right, but the van raises.

10 A. And then the van raises up.

11 Q. That increases -- that increases the distance.

12 A. The height of the van goes up and then so you're -- so the
13 height goes up --

14 Q. In other words, they would have a -- it would be more
15 difficult to see, is what I am asking you.

16 A. Yes, sir. At the eye level it would be more difficult to
17 see, yes, sir.

18 THE COURT: I think I understand.

19 THE WITNESS: I apologize.

20 THE COURT: That's okay.

21 DIRECT EXAMINATION (RESUMED)

22 BY MR. SANDMAN:

23 Q. And if they were a little bit taller, these children were a
24 little bit taller than -- you know, is it about four-foot-one
25 we're talking about? So if they were even four-foot-four,

1 would that have affected your ultimate opinion? Would they
2 have been big enough to even see at that height?

3 A. It doesn't change my opinion at all.

4 Q. So there's some -- they've got to be a certain height
5 that's way taller than they are in order for you to conclude
6 they could see what they said they saw?

7 A. That's correct. A couple of inches in this whole case,
8 given the information that we were looking at, a couple of
9 inches just doesn't make enough difference over these
10 distances.

11 Q. Now, I want to ask you about this photo we're looking at.
12 Do you see there's sort of a bar? Is that the A bar? The one
13 that's next to the windshield there on the passenger side. I
14 mean, the driver's side. Excuse me.

15 A. On the driver's side you have what we refer to as an "A
16 pillar," which is the windshield support post, and also it
17 supports the driver's door on that corner.

18 Q. So from this view, at least a portion of the time that that
19 vehicle is passing, does that A pillar affect the visibility
20 into the passenger seat of the van?

21 A. Yes, sir. As the vehicle moves there is going to be
22 different things that affect the viewer from the outside
23 looking at the van, and the A pillar would be one of those.

24 Q. And the next photo, 39. Page 41. I'm sorry.

25 So now the view, it's still 20 feet away, correct?

1 A. Yes, sir.

2 Q. And now this would depict what the van is going to look
3 like as it's starting to really just pass them by, is that
4 right?

5 A. Yes, sir, that's correct. At 20 feet.

6 Q. What is the view now into the passenger area of the van?

7 A. Well, basically you can just see part of the steering
8 wheel, part of the driver's top part of the bucket seat a
9 little bit, but that's it.

10 Q. Then 42. What are we seeing there in 42?

11 A. Sort of a picture of the van after it's passing by. And
12 what you're seeing is just now through the back window behind
13 the driver's window, the first window, you're seeing what looks
14 like the outline of the bucket seats. And you can see a bit of
15 the steering wheel as well, the rear-view mirror.

16 Q. Then 61. What are you showing there?

17 A. This is just a ground measurement up to the driver's -- the
18 lower portion below the window. The bottom part of the -- the
19 upper part of the driver's door.

20 Q. If we expand that, can we see what the measurement is? Or
21 do you remember what it was?

22 A. It's four feet four inches.

23 Q. So the children were three inches shorter than the height
24 of the bottom of the driver's door?

25 THE COURT: Not the bottom of the door.

1 MR. SANDMAN: I'm sorry. The bottom of the window.

2 A. Right. The top of the driver's door. So about three
3 inches shorter, yes, sir, if they were standing up against the
4 van.

5 BY MR. SANDMAN:

6 Q. Okay. They're down below that.

7 A. Yes, sir.

8 Q. What's the next photo? Sixty-two, I think. Next one.
9 Sixty-two.

10 What are we looking at here? Is this basically just an
11 enlarged shot of what we just looked at?

12 A. Yes, sir, that's a close-up of that, of the ruler.

13 Q. Now, I'd like to have you show us -- we'll show you some
14 photos from 10 feet away. And we'll start with 3937.47, which
15 is actually at Page 48.

16 So now we're 10 foot away, is that right?

17 A. Yes, sir.

18 Q. Would you say the view has improved or not as good as it
19 was at 20 feet?

20 A. Well, the view is much more of an angle. You can see a lot
21 of detail in the outside of the van. You can see a little bit
22 more inside the van. You can see the outline of the seat, the
23 steering wheel. But it's awfully close.

24 Q. So from this angle -- and the van is moving, right?

25 A. Yes, sir, the van is moving.

1 Q. So even at five miles an hour, how long are the children
2 going to have that particular view?

3 A. At -- from this distance, you're talking seven feet a
4 second, so the van will move, you'll probably get maybe a
5 second and a half or two seconds worth of view at five miles an
6 hour.

7 Q. Let's go to Page 49. This is a similar view of the A
8 column there blocking the passenger seat.

9 A. Yes, sir, a view 10 feet looking up into the front of the
10 van.

11 Q. Then the -- let's see 53. And then 56. And 60.

12 Can we look at 3937.1, which is Page 2.

13 What are we looking at here?

14 A. This here is just a general shot that I took when I got to
15 the tow yard where I go around the vehicle. That's just a
16 general photograph.

17 Q. Would you have to be sort of standing in front of a moving
18 vehicle to take this photograph? Are you in front of the
19 vehicle?

20 A. Yeah. I'm not directly in front of it, but I am standing
21 straight up when I am taking the photograph into the front of
22 the vehicle. Or offset photograph of the vehicle.

23 Q. I wanted to have you look at some interior photos of the
24 van.

25 3937.14. I'm sorry. That's at Page 15.

1 What are we looking at here?

2 A. This is just an interior shot looking from the passenger
3 side of the van looking into -- so the seat you see is the
4 passenger seat and then the driver's seat. And you can see
5 that the seats are a little bit askew. The passenger seat is a
6 little bit set behind the driver's seat.

7 Q. Are those seats movable or are they...?

8 A. No, sir, those seats are basically affixed to the floor of
9 the van on pieces of plywood, in a stanchion underneath.

10 Q. So the passenger seat is set further back into the van than
11 the -- or nailed into the van further back into the van than
12 the driver's seat?

13 A. Yes, sir.

14 Q. Let's take a look at Page 16. What are you doing there?

15 A. This was just where I laid a ruler from the center of the
16 seat to the center of the seat to show the distance between the
17 center of the driver's seat and the center of the passenger's
18 seat.

19 Q. Can we expand that to see what the distance is.

20 A. So what you're seeing there is the center of the ruler and
21 it runs to the center of the seat at about three feet. So the
22 center of the driver's seat to the center of the passenger seat
23 is about three feet...it looks like seven inches.

24 Q. Okay. Page 17. What does this depict?

25 A. These are just additional photos where I leaned more into

1 the van to get a picture looking down on the seat to get the
2 measurements correct. And you're seeing about three-feet-six,
3 three-feet-seven to the center of the passenger seat.

4 Q. And then Page 19?

5 A. This, in fact, here is depicting the inside edge of the
6 driver's seat to the inside edge of the passenger seat at about
7 one-foot-ten inches.

8 Q. Then Page 22.

9 A. This is a height measurement to the passenger seat from the
10 ground up. So we're at three feet about two inches, if you
11 look at the slope of the actual seat part. So about three feet
12 two inches up from the ground.

13 Q. When you completed all these measurements, what did you do
14 next after that?

15 A. Well, once I collected all the information and the
16 information about the van itself and collected all that, I set
17 about analyzing the information, and then I went ahead and sent
18 away to the computer company that I use for my diagrams and
19 stuff and they offer a service where they'll build you a
20 three-dimensional vehicle for use in a computer program.

21 Q. Did you have to send them some data?

22 A. Yes, I sent them information about the vehicle first, and I
23 sent them a couple of photographs of the vehicle, and then I
24 gave them information about the height of the seats, and such,
25 for the vehicle for them to construct a 3-D animated vehicle

1 that matched closely to the actual van itself.

2 Q. Did you attempt to actually locate a 1970 -- is it '71?

3 A. '72.

4 Q. -- '72 model van of this precise description so that you
5 could actually test that van and drive it and...?

6 A. Yes, sir. There was a considerable amount of time spent
7 trying to locate a 1972 van that matched this van with the
8 windows. I was able to find a cargo van, but it didn't have
9 the windows. But I spent time and actually considered
10 purchasing a van so that we could use it for an actual scene
11 reconstruction, and position a van so that we could take
12 photographs and actually do one with a real vehicle at the
13 scene.

14 Q. Did you ultimately create this recreation using the
15 computer-generated views?

16 A. Yes, sir. Once the -- once we weren't able to come up with
17 a van or to find a van or purchase a van, I moved next and I
18 suggested next an animation be done to help confirm what we saw
19 at the tow yard of the ability of the children to see up into
20 the van. So I basically constructed a three-dimensional van,
21 or the company did, sent it to me, I input it into an
22 animation, then I positioned the bodies inside the van,
23 according to my measurements and heights, and then ran -- or
24 created an animation.

25 Q. Did you need that animation to reach your final conclusions

1 or were you creating the animation to display your final
2 conclusions?

3 A. Typically the animation is mostly demonstrative. The
4 purpose of the animation basically is to look at something in
5 3-D and say am I right, am I correct about what I've collected
6 data wise, and does it match the information I have regarding
7 where the witnesses are and what they could see inside the van.

8 MR. SANDMAN: Can we show that animation, Exhibit 111?

9 THE COURT: It's admitted?

10 MR. SANDMAN: Yes.

11 THE COURT: Thank you.

12 BY MR. SANDMAN:

13 Q. While we're looking for that, apart from the animation,
14 which is demonstrative, what was your ultimate conclusion with
15 respect to whether the children could see what they reported,
16 which was that they saw the driver of the van elbowing the
17 children and striking the children with his fist as he drove
18 through the parking lot?

19 A. My conclusion over all was that they could not have seen
20 what they said they saw. That was my overall conclusion.
21 Based on my measurements, the location, the speed of the van,
22 and so on.

23 MR. SANDMAN: Any hope for the animation? No?

24 Well, we won't give up quite yet, but we will soon give up.

25 BY MR. SANDMAN:

1 Q. Can we look at Exhibit 6? Why don't we just go to that for
2 now. Which is Page 31 of the --

3 THE COURT: You want to take a five-minute break so
4 you can get your IT thing working?

5 MR. SANDMAN: Okay. Sure. Thank you.

6 THE COURT: Take five minutes.

7 (A recess was taken from 2:30 p.m. to 2:44 p.m.)

8 THE COURT: Okay. Have you got your technical
9 difficulties?

10 MR. SANDMAN: I think Mr. Braccio solved our technical
11 problems.

12 THE COURT: Okay.

13 MR. SANDMAN: Let's run it.

14 (Video playing)

15 MR. SANDMAN: One more time.

16 (Video playing)

17 MR. SANDMAN: Can you pause it?

18 BY MR. SANDMAN:

19 Q. So can we see something in the passenger seat there? What
20 are we seeing?

21 A. It looks like you can see just a small bit of the young
22 lady's head.

23 Q. If the children were saying that they saw Mr. Jones
24 elbowing the passenger in the chest, do you think that would be
25 possible, given your analysis of the size of the witnesses and

1 the size of the van and so on?

2 A. No, sir, that would not be possible.

3 THE COURT: Can I ask a question?

4 Would that change if the passenger were standing in the
5 passenger seat?

6 THE WITNESS: No, sir. The problem we have with the
7 overall situation, based on my analysis at the tow yard, is
8 that it's too dark inside the vehicle to see that kind of thing
9 from these distances away. The part of the animation in the
10 van you see, the windows are much clearer because that's the
11 way the van was built. But you couldn't see that from further
12 distances away and given the darkness of the windows.

13 THE COURT: So your analysis isn't premised on the
14 passenger sitting.

15 THE WITNESS: That's correct, it is not.

16 THE COURT: It doesn't matter if she were sitting or
17 standing.

18 THE WITNESS: Yes, that's correct. Inside -- when
19 you're looking through that van window as it's traveling, you
20 can't see clearly inside.

21 THE COURT: Okay. Go ahead.

22 MR. SANDMAN: Let's run it again.

23 (Video playing)

24 MR. SANDMAN: Okay. Stop. Never mind.

25 (Video playing)

1 BY MR. SANDMAN:

2 Q. Okay. What are we seeing there? Basically the same view,
3 just closer?

4 A. Yes, sir. The van is closer, it's passing by, and you can
5 see even less inside the van.

6 THE COURT: So are you saying that this -- you're
7 purporting that this would be the view that the witnesses in
8 this case -- this is what they could see at that time, that
9 this graphic takes into account the light at the time of day
10 and what could be seen inside the van?

11 THE WITNESS: No, sir, that it does not.

12 What we're looking at here is the people in the van, the
13 height, and what was relative to the viewer, the child, what
14 would they have been able to see if they could have seen
15 through the windows.

16 THE COURT: So then I don't understand your answer
17 when you said it doesn't matter if the passenger's standing or
18 sitting because it doesn't -- that answer does not make any
19 sense. Because we're either focused on angles or we're focused
20 on light.

21 THE WITNESS: In this case we're focused strictly on
22 angles.

23 THE COURT: So let me pose my question to you again:
24 If the passenger were standing in that seat, would it make a
25 difference?

1 THE WITNESS: In this scenario, if I had put the
2 passenger standing, you would have been able to see him through
3 this glass, yes.

4 THE COURT: Why did you assume the passenger was
5 sitting?

6 THE WITNESS: Because that's the information that I
7 had, that I had to work with, that the child was seated in the
8 seat.

9 THE COURT: Where did you glean that information?

10 THE WITNESS: That information came not only from the
11 information provided to me by the -- I believe it may have been
12 Mr. Barnett's report, general information, and then I also took
13 it from the cut-outs of the seat. Because the child apparently
14 had head injuries, and the head injuries, there was blood on
15 the seat, so that gave me the idea the child was seated. And
16 there was other pieces of information that told me the child
17 was seated, but I don't recall exactly what those were.

18 There was never any information placed or given to me that
19 the child was standing at any time in the vehicle.

20 THE COURT: Okay.

21 BY MR. SANDMAN:

22 Q. Do you remember what the children -- the witnesses said the
23 passenger was doing when she was in the van?

24 A. Yes, sir. I believe the children said the passenger was
25 seated, the girl was seated in the vehicle.

1 Q. Do you remember in the trial transcript there was a
2 demonstration given by the prosecutor and Ray Lopez with
3 respect to what he saw and what the passenger was doing?

4 A. Yes, sir, I believe they were all demonstrating as the girl
5 was seated in the chair during the trial transcript, is what I
6 got.

7 Q. So the prosecutor sat on a chair and then did she have
8 another chair next to her?

9 A. I believe she set it up such that she was the passenger in
10 the vehicle, the prosecutor was, and then had the child
11 demonstrate the hitting event.

12 Q. Let's go to Page 31.

13 THE COURT: Page 31 or Exhibit 31?

14 MR. SANDMAN: I'm sorry, Judge. It's Page 31, and
15 that's Exhibit 110.

16 THE COURT: Thank you.

17 BY MR. SANDMAN:

18 Q. If you could pull up the bottom of Exhibit 6.

19 What are we looking at there?

20 A. I took a look at the time of exposure to the -- where the
21 children said they were located, and I estimated that they
22 would have had about a 75-foot view of the van. And then I
23 took the speeds of the van that I came up with, 15 and 20, and
24 I took a look at the amount of time it would take the van to
25 travel that distance, 75, at the different speeds. So one was

1 20, one was 15, 15 miles an hour, from the observation through
2 the front window.

3 So I took a look at where they were and the van's position
4 so that the children could see partially through the front
5 windshield, and then when the van was 90 degrees to their
6 position, it was about 75 feet. Traveling at 15 miles an hour,
7 you have a time of view of the van itself of about three and a
8 half seconds. And then at 20 miles an hour, it's about two and
9 a half seconds.

10 Q. That's the van traveling at a distance from 75 feet from
11 the children?

12 A. Yes, sir. Well, the van is traveling 75 feet in a straight
13 line, and then there are some distances from the location where
14 the child is standing, and initially it was about 75 feet, I
15 believe.

16 Q. Let me direct your attention to Page 28 of that exhibit.
17 If we could just blow up those bullet points there.

18 On this page of your report, are you stating the basis for
19 your opinion that the children could not have seen what they
20 reported?

21 A. Yes.

22 Q. Could you sort of walk us through those points.

23 A. Yes, sir. The bullet points I came up with were, one, that
24 the children were too short in stature, and their viewing angle
25 of the event was too acute, for them to accurately observe

1 activity in the van. Even if an observer is elevated several
2 feet above the moving vehicle, it remains difficult to see
3 inside, due to the changing angles, contrast, and view
4 obstructions. And lighting conditions, I put in.

5 Q. Does a smaller person, say one, you know,
6 four-foot-one-inch tall, are they going to have different -- is
7 the lighting going to affect them differently than a taller
8 person?

9 A. Well, yeah, lighting affects all of us. And we stand at
10 certain heights and, what we're looking at, there may be a
11 glare off of an object to a child where it wouldn't be a glare
12 to an adult person looking at the same thing due to their
13 height. So that does change, yes.

14 Q. So the interior would appear darker to a shorter person?

15 A. I'm sorry?

16 Q. Would an interior appear darker to a shorter individual?

17 A. Yes, sir.

18 Q. Then what are the other reasons that supported your
19 conclusion that are noted in your report?

20 A. Well, probably the biggest thing that I am considering,
21 that I considered in this, was the fact that the van was moving
22 the entire time. So the relative angle of the van changes
23 relative to where the position of the children are standing.
24 So as the van moves, then you pick up reflections. I use the
25 term "view obstructions," but more like reflections or glare

1 coming off the glass that would obstruct your view into the
2 interior of the van.

3 Q. Are these considerations the same considerations you would
4 apply whenever doing a line of sight investigation in a
5 reconstruction?

6 A. Yes, sir.

7 Q. What about the body dimensions of Mr. Jones, did you take
8 those into account also?

9 A. Just the overall height of Mr. Jones I took into account so
10 I could place him correctly at the correct height inside the
11 van.

12 Q. And the distance between the seats, was that a factor that
13 you considered?

14 A. Yes, sir. The distance between the seats was done by the
15 3-D construction of the vehicle. They placed the seats apart,
16 and then I had to put the anthropomorphic people in the vehicle
17 on the seats correctly.

18 Q. I'd like to, before I wrap it up, just have you look at
19 Exhibit 18, some photographs we looked at yesterday from George
20 Barnett. Page 1 of Exhibit 18.

21 What are we looking at in that photograph?

22 A. There's two photographs. One on top is the passenger side
23 of the van with the doors open and the windows down. And then
24 the one below that, you have a picture looking angular at the
25 van with the windows down and the driver door open and the

1 window down on the driver's door. It looks like the back doors
2 might be open as well.

3 Q. Now, this picture taken by Mr. Barnett, you mentioned that
4 the doors and windows were down, does that affect the lighting
5 and the image, the ability to see into the van?

6 A. Yes, sir, I would say that would be true, yes.

7 Q. Why is that?

8 A. Well, you have -- you don't have any obstruction between
9 the light traveling through the glass, so you don't have
10 that -- as the windows are down, you get more light
11 transmission coming through. I don't know what the darkness is
12 of the windows, but in all the photos I've looked at of this
13 entire van, the windows look all dark on the van except for the
14 windshield basically.

15 Q. So the windows in the doors impact the view, is that what
16 you're saying? The lighting inside the van?

17 A. Yes. Yeah, that's correct.

18 Q. What about Page 4 of that exhibit? There, again, is there
19 something in that photo that tells us that the lighting is
20 affected?

21 A. In looking at this, you have -- you have a white vehicle
22 behind the van, and so there is going to be some reflection
23 from the white vehicle back into the back windows of the van
24 coming through the back, so it makes it look lighter on the
25 inside. And I don't really know what -- you know, I don't know

1 what exposures or what film speeds Mr. Barnett used then
2 either, so it's hard to say. But you can see a little better
3 in the van with that picture.

4 MR. SANDMAN: I don't have any other questions. Thank
5 you.

6 THE COURT: Thank you.

7 Mr. Braccio.

8 CROSS-EXAMINATION

9 BY MR. BRACCIO:

10 Q. Good afternoon, Mr. Gruen.

11 A. How are you, sir?

12 Q. Good. How are you?

13 A. Good.

14 Q. Good. The name of your company is Topgun Collision
15 Reconstruction, correct?

16 A. Yes, sir.

17 Q. And you are the only employee?

18 A. Yes, sir.

19 Q. Now, you've previously testified in court, correct?

20 A. Yes, sir.

21 Q. And since you've been a consultant, from 2002 to the
22 present, you have never testified for the prosecution, is that
23 correct?

24 A. Um, yes, that's correct. I believe that's correct, yes.

25 Q. You were retained on this case on June 23rd, 2008, correct?

1 A. Yes, sir.

2 Q. How many hours have you spent on this case up to this
3 point?

4 A. I want to say probably about 80 hours maybe.

5 Q. Can you estimate how much you've charged in this case?

6 A. Yes, sir. To date, not counting what I have worked on
7 preparing and for the trial, around 8200.

8 Q. Regarding your law enforcement background, you were always
9 a patrol officer, correct?

10 A. No, I was a supervisor for a year with the sheriff's
11 office. I was a sergeant. I was promoted to sergeant.

12 Q. But you were never promoted to detective in your law
13 enforcement career, correct?

14 A. Well, no, we don't have detectives in essentially -- in the
15 departments I worked in in the sheriff's office. But in the
16 Highway Patrol, you didn't really have like a detective, we
17 called them undercover officers, if you will, but not really
18 detectives.

19 So I did the function of a regular investigator and
20 detective in Cochise County because you had to, you sometimes
21 were the only person out there to do these investigations.

22 Q. You don't believe that eyewitness testimony is reliable, is
23 that correct?

24 A. Not all of it. I believe a good portion of it is not
25 reliable, yes, that's correct.

1 Q. Okay. In your report you stated: As most investigators
2 know, eyewitness accounts are typically unreliable, inaccurate,
3 and problematic at best. Especially when the witnesses are
4 children. Correct?

5 A. Yes, sir, that's correct.

6 Q. So you already come to this case with this skepticism
7 already then, correct?

8 A. Not -- well, yes. Yes. I believe that is true, yes.

9 Q. Let's talk about your work in this case.

10 You went to the Choice Market parking lot to measure,
11 photograph and examine this van sometime between June and
12 September of 2008, correct?

13 A. Yes.

14 Q. And you did this at about 10:00 or 11:00 a.m., correct?

15 A. Yes, sir. I don't recall what time I got to the tow yard.
16 I don't remember if I looked at the van first. I think I went
17 in the afternoon to the Choice Market, I think it is happened.
18 I did the van in the morning and then went to the scene in the
19 afternoon.

20 Q. Regarding the parking lot at the Choice Market, you don't
21 know whether that parking lot is the same as it was 23 years
22 ago, correct?

23 A. Well, it actually is not the same. It is not the same.

24 Q. And you determined that based upon comparing the aerial
25 photos from Google Earth and your own scene inspection?

1 A. Yes, sir. There were photographs from Google Earth, but
2 also the police photographs versus the photographs I took as
3 well. So when you compare some of those photographs, you can
4 see the parking lot has changed, a ramp has been installed, and
5 there's some -- I mean, you still have the dirt area. That's
6 pretty much the same parking lot, still pretty much the same.

7 Q. This dirt lot, would you agree with me, is not even level?
8 Even or level?

9 A. The lot is not level, that's correct. It has a down slope.

10 Q. Can we pull up Exhibit 110A. 3937.86.

11 Mr. Gruen, that is a photo you took showing that slope?

12 A. Yes, sir.

13 Q. And when you measured that slope, can you explain to the
14 Court how you measured that slope.

15 A. Yes, sir. I took a smart level, which is just a level that
16 gives you your degrees or your percentage, and I walked along
17 the slope, and I took measurements down that slope by setting
18 the level. In retrospect, when I was studying up for coming to
19 the trial, I also took some slope measurements off the actual
20 asphalt; and I remembered that, after we had had our
21 discussion. And I remembered that. So I took some
22 measurements in the dirt and then also on the asphalt slope.
23 On the asphalt path going down.

24 Q. When you took that slope measurement, that presumes a flat
25 plane, correct?

1 A. Yes. In other words, you're looking for what we call rise
2 over run. So what's the rise over the run. So your rise, how
3 much rise is it over the run of the road or the --

4 Q. Right. So if there are potholes in this, that's not going
5 to take into account those potholes or those divots in the
6 road.

7 A. Yes, sir, that's correct. If you're doing it on the dirt
8 it's a little tougher, yes.

9 Q. So this is a line of sight analysis, according to you,
10 correct?

11 A. Yes, sir.

12 Q. Your expertise is generally in accident reconstruction, and
13 we have no accident here, correct?

14 A. Well, yes. But as I explained earlier, it's a two-part
15 process. So we don't have the accident, but we have the first
16 part of the process that I would normally do in a crash. So I
17 don't have the crash, but if I had the crash, I would have done
18 this part anyway. So the crash really doesn't mean anything.
19 I've been asked to look at something that would have been sort
20 of like a pre-crash event.

21 Q. You've only done this type of no-accident line of sight
22 analysis in very, very few cases before, correct?

23 A. Not correct.

24 Q. Do you recall your interview with us on August 11th, 2017?
25 Can we pull up Exhibit 205, Page 16, Lines 16 through 17.

1 So, Mr. Gruen, my question to you in the interview was:

2 How many times have you done a line of sight or a visibility

3 study, to use our words, without a collision? And you said:

4 Probably only, I would say, maybe five times. That's a guess.

5 Is that correct?

6 A. Yes, sir, that is correct.

7 Q. Then let's go to Page 59 at Line 4.

8 And you indicated again that this line of sight analysis:

9 I have done that, but as I said earlier, it's very, very few.

10 Did I read that correctly?

11 A. Yes, sir, you read that correctly. I may not have

12 understood your question correctly could be why. But that is

13 the correct answer for something without any collision

14 involved, but that is correct, yeah.

15 Q. And you've never previously testified in court about a sole

16 line of sight analysis, correct?

17 A. That's correct, I've never had to do that.

18 Q. And you've never done a case like this going back 23 years,

19 correct?

20 A. No, not a case like this, that's correct.

21 Q. And we've established this is not a reconstruction of an

22 accident, you don't have any measurable variables here like you

23 would an accident scene, correct?

24 A. Well, we do have measurable variables.

25 Q. We'll talk about those in a minute. But, for instance, you

1 don't have skid marks?

2 A. Correct.

3 Q. Impact collision?

4 A. Correct.

5 Q. Here we just have the dimensions of the van, the
6 approximate height of the kids, their account, and Barry Jones'
7 account, correct?

8 A. Right. And our measurements that we took from the parking
9 lot itself, the slope, and the width, and such.

10 Q. Okay. So for a line of sight analysis, the important data
11 would be the height of the witness, his or her distance to the
12 van, how fast the van was moving, and where the van traveled,
13 correct?

14 A. Yes, sir.

15 Q. Using these variables will show you what the witness could
16 or could not see, correct?

17 A. Right. If we have good information, yes. In this case, we
18 didn't have the best information.

19 Q. We'll talk about those.

20 Just to be clear, their angle of view changes based upon
21 where they're standing in the parking lot, correct?

22 A. Yes, sir. You mean relative to the van, it changes, yes.

23 Q. Correct. Regarding the measurements, you did not get any
24 measurements for Barry Jones, correct?

25 A. I just got his overall height is all. I didn't take them

1 myself, if that's your question.

2 Q. Okay. Do you recall telling us in the interview that you
3 did not get any measurements for Barry Jones?

4 A. I may have. In retrospect, when I considered that, I
5 remember that I needed to know that, so I would have gotten it.

6 Q. Let's pull up Page 40, Line 25.

7 I asked you if you got any measurements for Jones. Your
8 answer: I did not. Correct?

9 A. Correct.

10 Q. You just had some general height measurements from the
11 Internet for Rachel Gray, correct?

12 A. Well, yes, I had those. And then I, as I indicated
13 earlier, I did some research on the Net and also purchased a
14 book that gave me information as well.

15 Q. Just so we're clear about where she is in relation to this,
16 I'd like to talk about this now. Let's pull up Exhibit 110A.
17 This is Bates Number 3937.68.

18 THE COURT: Eight six, I think. Oh. The next one?

19 MR. BRACCIO: No, no, this one.

20 BY MR. BRACCIO:

21 Q. From your measurement of this seat, and as you've
22 previously testified today that Rachel Gray was sitting in this
23 seat, her head would have come up between the 9 and the 10,
24 correct?

25 A. Yes, I believe that's correct. Yes, sir. If she was

1 sitting straight up in the seat.

2 THE COURT: Just to be clear, we're looking at this
3 sideways.

4 MR. BRACCIO: Yeah, is there any way we can shift the
5 orientation of that?

6 One more time.

7 BY MR. BRACCIO:

8 Q. There we go. So this picture is oriented south-north now,
9 and her head would come up in that seat between the 9 and the
10 10, correct?

11 A. Yes, sir, if she was sitting straight up in the seat.

12 Q. Correct, if she was sitting straight up. And so that is at
13 least between two to three inches above that swatch cut out in
14 that seat, correct?

15 A. Yes, sir.

16 Q. Let me show you 3937.64 in that same exhibit.

17 You previously testified that Ray is four-feet-one-inches
18 tall?

19 A. Yes, sir.

20 Q. And this van measures to the front windshield here, what,
21 4.3 to 4.4 -- or four feet three inches to four feet four
22 inches?

23 A. Yes, sir. At its uninflated tire height, yes, that's
24 correct.

25 Q. So depending on the inflation of those tires, Ray's head

1 comes up just shy of that front windshield there.

2 A. Right, the van would go up. So he would be -- the van
3 would be taller than him. What we see here, he would be raised
4 up -- the van would be raised up.

5 Q. You had Ray Lopez's height from the school records,
6 correct?

7 A. Yes, sir.

8 Q. But no height measurements for Laura Lopez?

9 A. I did not, because she was eight and a twin, I assumed the
10 same height for her.

11 Q. Your entire analysis then is essentially based off of Ray
12 Lopez's height?

13 A. Yes, sir, that's correct.

14 Q. Let's talk about where the children were standing in the
15 Choice Market parking lot. In your report you indicated that
16 you placed the children at the position in the parking lot
17 where the information indicated the children were walking.
18 Correct?

19 A. Yes, sir.

20 Q. And you base that off of the trial exhibit, 199, where Ray
21 Lopez indicated that's where they were standing.

22 A. Yes, sir.

23 Q. Let's pull up Exhibit 64. It's the last page.

24 I'm showing you Exhibit 64, Bates 4685.

25 This is the sole document you base --

1 THE COURT: I'm sorry. We need to be careful when
2 we're pulling these up, because I think we're scrolling through
3 some other exhibits that we don't want. There are some other
4 pictures that were --

5 MR. BRACCIO: Sorry, Your Honor. I believe these are
6 all admitted. It's Exhibit 64 that's in evidence.

7 THE COURT: My problem is I thought I saw an autopsy
8 photo that we aren't -- we are trying not to have on the public
9 monitors as we scrolled through that. I just want to be
10 careful about what we're displaying on the public monitors. Go
11 ahead.

12 MR. BRACCIO: Absolutely. My apologies.

13 BY MR. BRACCIO:

14 Q. This is Trial Exhibit 199 that you relied on for the
15 approximation of those children in the parking lot, correct?

16 A. Yes, sir.

17 Q. You made an assumption about where they were standing based
18 upon this photograph?

19 A. Yes, sir.

20 Q. And based upon that assumption, you put him at the edge of
21 the asphalt pad, correct?

22 A. Yes, sir, at the edge of the asphalt path, and then some
23 distance over from the light pole. 26 feet or 20 feet,
24 somewhere in there, yes, that's where I got that, at the edge
25 of the pad.

1 Q. You did not find this information reliable at all based
2 upon what you perceived as their statements being convoluted?

3 A. Yes, sir, I don't find that a reliable piece of
4 information. But it was all I had, other than what he said at
5 one point in one of his interviews, that he was 20 feet from
6 the van, so that's all I had.

7 Q. And the other piece of information came from Barry Jones,
8 from a map he drew, correct?

9 A. Yes, sir. One piece of information, yes.

10 Q. Mr. Gruen, I'm showing you on the screen here Exhibit 212.
11 It has not been admitted yet. Can you identify this document
12 for me, please.

13 THE COURT: Can you take it off the monitors until
14 it's either admitted or not admitted?

15 MR. BRACCIO: Your Honor, may I approach the witness?

16 THE COURT: You may.

17 MR. BRACCIO: I apologize.

18 BY MR. BRACCIO:

19 Q. Mr. Gruen, I am showing you Exhibit 212, what has
20 previously been marked as Exhibit 212. Do you recognize this
21 document?

22 A. Yes, sir.

23 Q. Did you rely on that document to determine the approximate
24 location of the children at the Choice Market parking lot on
25 May 1st, 1994?

1 A. I did use some of this information for one of my animations
2 that I looked at, yes.

3 MR. BRACCIO: Your Honor, at this time I would move to
4 admit the exhibit under 703 as a document he's relied upon for
5 that limited purpose.

6 THE COURT: He hasn't identified what the document is.
7 I have no idea what it is.

8 BY MR. BRACCIO:

9 Q. Can you tell us what the document is.

10 A. It's a map. I don't know who drew the map. The
11 information I had was that Mr. Jones drew the map. It's just a
12 map of the Choice Market with directions, and then there is
13 some verbiage written on it, and one of them is the position of
14 the children at the top of the fence line.

15 THE COURT: Just a moment. Have you seen this
16 exhibit?

17 MR. SANDMAN: We disclosed it.

18 THE COURT: Do you object to it being admitted?

19 MR. SANDMAN: No, Your Honor.

20 THE COURT: It's admitted. You may now publish.

21 MR. BRACCIO: Thank you, Your Honor. My apologies.

22 Pull up Exhibit 212.

23 BY MR. BRACCIO:

24 Q. This was the other piece of information you relied upon,
25 correct?

1 A. It was one of them, yes, sir.

2 Q. Your understanding is that Mr. Jones drew this map as part
3 of these proceedings?

4 A. Yes, at some point he drew this map, yes.

5 Q. And other than the approximation from Ray Lopez, you have
6 no idea where the Lopez children were standing in that parking
7 lot, correct?

8 A. I know within the parameters of the parking lot. I know
9 that they were in that boxed area somewhere.

10 Q. You're saying essentially they're in the parking lot.

11 A. They're in the dirt area of that parking lot somewhere,
12 yes.

13 Q. Okay. Let's talk about the distance to the van.

14 You have no idea how close Ray and Laura were to that van,
15 correct?

16 A. Other than what Mr. Lopez said at one point, that he was 20
17 feet from the van. That's the only piece of information that I
18 ever got that I thought was something.

19 Q. Okay. Do you recall telling us in our interview that this
20 was an obvious variable that you did not have exact information
21 on?

22 A. That's correct, yes.

23 Q. And you stated that you did not know where the children
24 were in relation to that van.

25 A. That's correct.

1 Q. And you did not know exactly where that van was when they
2 observed all of the events, correct?

3 A. Yes, sir. Again, within the parameters of that box, we
4 know the van was somewhere in there, but where it was in
5 relation to the children exactly, I do not know.

6 Q. All right. Let's talk about how fast the van was
7 traveling.

8 You have no idea how fast that van was traveling, correct?

9 A. I do not.

10 Q. In order to determine this factor, you just got in your car
11 and drove through that parking lot?

12 A. Yes, sir, I did, as I explained, sort of a drive-through
13 several times through the parking lot to get a comfortable
14 feel, plus some observations of vehicles in the area traveling
15 through the parking lot, but that was it.

16 Q. You did not even drive a similar vehicle, correct?

17 A. I did not, that's correct.

18 Q. You drove your Lincoln MKX?

19 A. After our interview -- I believe -- I may not have owned
20 the MKX at that time. I believe I owned a 1998 GMC pick-up. I
21 don't remember when I bought the MKX. So I would say the
22 pick-up was probably the vehicle I used.

23 Q. So based upon your driving your own vehicle without any
24 reference, you guessed that the van was traveling 15 to 20
25 miles per hour?

1 A. Yes, sir, again, just driving through the parking lot at
2 speed.

3 Q. Would you agree with me that that's pretty fast through
4 that parking lot?

5 A. No, I don't think it was that fast. I didn't get that
6 feeling. In fact, it's kind of bumpy and rough going through
7 the parking lot, so that's actually kind of on the high end. I
8 think that's on the high end of the speed.

9 Q. Do you think an eight-year-old child could run 15 to 20
10 miles per hour?

11 A. No.

12 Q. Do you recall from the record in this case, from the
13 documents you reviewed, that Laura said she didn't know how
14 fast the van was traveling?

15 A. Yeah, I believe that's correct, yes.

16 Q. But Ray did, didn't he?

17 A. He did not know how fast the vehicle was traveling, but I
18 believe there was some statement with regard to "could you run
19 as fast as the van was going?" or something like that.

20 Q. Do you recall that Ray told detectives that the van was
21 going slow? Excuse me. That Ray told the defense attorneys
22 that the van was going, quote, slow?

23 A. Yes, I do recall that.

24 Q. In reference to your prior statement, Ray also said it was
25 going so slow he could have jogged next to it, correct?

1 A. I do recall him saying that, yes.

2 Q. Let's talk about the direction of travel.

3 Can you pull up Exhibit 110, 3934, please

4 I think you've previously indicated you don't know where
5 the van was when the Lopez kids first saw it, correct?

6 A. Yes, sir, that's correct.

7 Q. And you have no idea how far that van traveled in this
8 case, correct?

9 A. Well, we do know how far the van traveled if it traveled
10 across the parking lot. I'm not sure I'm clear on your
11 question.

12 Q. Okay. Let me see if I can pin you down here.

13 Other than the general south-to-north direction, you
14 testified earlier that you had information about the direction
15 of the van through the parking lot. No one in this record gave
16 you any other information, correct?

17 A. I'm sorry, I am not understanding.

18 Q. Terrible question. Let me try to rephrase that.

19 Driving off of Earp Boulevard here, from that
20 south-to-north direction towards Benson Highway, that was the
21 only information in this case you had about where that van
22 traveled, correct?

23 A. Yes, sir, that the van came from Earp and went through the
24 parking lot, correct.

25 Q. Your report, your illustration and your graphic video all

1 show the van traveling in a straight line, correct?

2 A. Yes.

3 Q. Do you recall from the records that you reviewed in this
4 case that Laura and Reynaldo told their mother they saw the van
5 swerving like the driver was drunk?

6 A. I do recall something like that, yes.

7 Q. Do you recall that Laura told defense attorneys that they
8 saw the man driving with one hand, hitting the little blonde
9 girl in the passenger seat?

10 A. Yes, sir.

11 Q. Do you also recall that Ray told detectives that he saw the
12 man driving with one hand hitting the little blonde girl in the
13 passenger seat?

14 A. I do recall that, yes.

15 Q. Are you aware that another witness in this case, Joyce
16 Richmond, who was Barry Jones' girlfriend, who actually drove
17 the van, told detectives that the van would swerve every time
18 you applied the brake?

19 A. I don't recall that.

20 Q. Okay. Let me pull up Exhibit 1.

21 Mr. Gruen, I'm showing you the May 2nd, 1994 police
22 interview with Joyce Richmond.

23 THE COURT: Is this admitted?

24 MR. BRACCIO: It is admitted, Your Honor, it's under
25 Exhibit 1. Bates Number 1311.

1 MR. SANDMAN: I'm sorry. Was this -- I don't believe
2 this was a document that was given to the witness as part of
3 his review.

4 MR. BRACCIO: Right, yeah, this is from the record.

5 MR. SANDMAN: I'll stipulate to what the document
6 shows, but I don't think that was the document he had, so he
7 couldn't possibly know what's in it.

8 THE COURT: Are you purporting this to be a document
9 that he had?

10 MR. BRACCIO: No, not at all.

11 BY MR. BRACCIO:

12 Q. This is a document that was in the Barry Jones file of an
13 interview that police conducted. If you're not aware of it,
14 okay.

15 A. I would have to look at my report to see if it was in the
16 documents that I looked at.

17 Q. Okay.

18 A. I don't recall it.

19 Q. So maybe this document was never even provided to you.

20 A. That's possible. Without looking at my -- what I reviewed
21 in my report, I don't know.

22 THE COURT: Mr. Sandman, do you know if this document
23 was provided to the witness?

24 MR. SANDMAN: I don't believe so, Your Honor, no.

25 BY MR. BRACCIO:

1 Q. So you did not review this document as part of your review,
2 correct?

3 A. Correct.

4 Q. Okay. But we have a witness in this case who told
5 detectives that every time she was driving the vehicle and
6 applied the brake, the van would swerve. Do you see that
7 there?

8 THE COURT: Well, is that a question?

9 MR. BRACCIO: It is a question.

10 THE COURT: Well, he doesn't have his report, so
11 you're purporting that somebody said this --

12 MR. BRACCIO: Sure.

13 THE COURT: -- in your question to him. It's on the
14 paper, it's in the document.

15 MR. BRACCIO: Sure. Okay.

16 BY MR. BRACCIO:

17 Q. Would this document have been relevant to your analysis?

18 A. No, it wouldn't have made any difference.

19 Q. That the van would swerve every time you applied the brake?

20 A. Correct.

21 Q. A swerving van would certainly change the angle and line of
22 sight for Reynaldo and Laura Lopez, correct?

23 A. It would slightly. It depends on, of course, the degree of
24 the swerve. If the van is swerving from one side of the
25 parking lot to the other, by all means. But if you're driving

1 in a straight line and you're swerving a little bit, it's not
2 going to make that much difference.

3 Q. And your analysis doesn't account for any swerving of the
4 van, correct?

5 A. That's correct.

6 Q. Let's talk about the time that they could see the van.
7 Could we pull up Exhibit 110 again, which is your report, 3936
8 Bates number.

9 So your analysis of the amount of time that Reynaldo and
10 Laura Lopez could see the van is based on variables that you
11 simply don't know.

12 A. Yes, sir. Some very general variables, yes.

13 Q. Again, those variables are where they were standing.

14 A. Correct.

15 Q. Their distance to the van.

16 A. Correct.

17 Q. The speed of the van.

18 A. Yes.

19 Q. And the distance and direction the van traveled.

20 A. Yes, when I oriented the van relative to the witnesses, I
21 oriented the van such that there would be a sight line through
22 the front windshield glass of the van itself, and that's where
23 I started. Because there was some information that they were
24 looking partially through the front windshield and the side
25 window. So I oriented the van away from them to get that

1 angle, and that gave me the 75 feet approximate.

2 Q. You previously indicated that the time that they could see
3 the van was between 1.7 and 3.4 seconds, depending on how fast
4 the van was traveling, correct?

5 A. I don't think I said 1.7. I think it was 2.6 and 3.5
6 or -- I believe.

7 Q. Let's take a look. Scroll down to the next page.

8 So at the bottom page, this is Page, well, Bates Number
9 3937. This is the last page of your report, correct?

10 A. I believe so, yes, sir.

11 Q. And you indicated in this that the observation time would
12 be anywhere from 1.7 to 2.2 seconds, correct?

13 A. Yes, sir. That's a different -- that's -- this is where
14 the corner fence line was involved, yes. So there is a 1.7 at
15 20, that's correct.

16 Q. And you put the location of this based upon the map that
17 Mr. Jones drew of where he indicated he saw the Lopez children,
18 correct? That's your understanding?

19 A. Yes, sir.

20 Q. Go up one more page. Let's look at Page 3 of this appendix
21 to your report. Bates Number 3936.

22 I believe this is just what you were indicating a moment
23 ago, that you put the speed here from 2.6 to 3.4 seconds,
24 depending on the location of the Lopez children, where Ray
25 Lopez indicated they were standing in the Choice Market parking

1 lot, correct?

2 A. Yes, sir, that's correct.

3 Q. These estimates contradict the statements from both the
4 eyewitnesses in this case, correct?

5 A. I'm sorry. Are you referring to the children?

6 Q. I am.

7 A. Yes.

8 Q. Laura told the defense attorneys in this case that she
9 could see the van for, quote, a while, correct?

10 A. Yes, sir.

11 Q. And Ray told Leslie Bowman and David Darby that he watched
12 the man for at least 10 seconds or longer, do you recall
13 reading that?

14 A. I do recall reading that, yes.

15 Q. Do you recall that David Darby even had him count out 10
16 seconds, correct?

17 A. Yes, sir, I remember reading that, yes.

18 Q. So the eyewitness reports contradict your own calculations,
19 correct?

20 A. Yes, sir, that's correct.

21 Q. You did not ask the Federal Public Defender's office to
22 conduct any additional investigation in this case, correct?

23 A. No, sir, I did not.

24 Q. Are you aware that the Federal Public Defender's office are
25 in contact with Leslie Bowman?

1 A. No. I actually tried to contact Leslie at one point in
2 time as well. I think I did make contact with her.

3 Q. And you recall from reading the documents in this case that
4 you reviewed that Leslie Bowman went out to the home of the
5 Lopez family to interview Reynaldo and Laura, correct?

6 A. Yes, sir.

7 Q. And she was there with defense attorney David Darby and
8 Dave McDonald from the County Attorney's Office, correct?

9 A. Yes, sir, that's correct.

10 Q. And she had them, the Lopez children, show her where they
11 were standing in the parking lot and where they saw the van,
12 correct?

13 A. I don't know if that ever happened.

14 Q. Do you recall -- let me take this step by step here.

15 Do you recall that she indicated in the interview that she
16 would like them to take her to where they were in the parking
17 lot?

18 A. Yes, sir. I do remember that, yes.

19 Q. Let's pull up transcript April 7th, 1995. This is a trial
20 transcript in this case. Page 41, Lines 9 through 16.

21 Did you read the trial transcripts in preparation for this
22 report in this case?

23 A. Yes, sir, I actually did look at them.

24 Q. Does this document from this trial transcript refresh your
25 recollection that Leslie Bowman had the children take her out

1 to the parking lot where they were standing?

2 A. Yes, sir, they said they were going to do that, but -- I
3 don't know that they ever did.

4 MR. SANDMAN: Excuse me. I'm sorry. The transcript
5 just says that she -- they went to the market and walked
6 around, it doesn't say that the children identified the
7 location where they were standing. I think the document is
8 being misused.

9 MR. BRACCIO: Okay. Let's back up then, because I
10 don't think this document is being misused even remotely.

11 THE COURT: I'm sorry. Give me a moment.

12 MR. BRACCIO: Sure.

13 THE COURT: I'll sustain the objection --

14 MR. BRACCIO: Sure. I'll back up on this.

15 THE COURT: Let me finish what I'm saying.

16 MR. BRACCIO: I'm sorry, Your Honor.

17 THE COURT: I'm going to sustain the objection because
18 you purported this transcript to say that -- to suggest that
19 the children took Ms. Bowman to the location they were standing
20 when they viewed the van. That's not what it says.

21 Next question.

22 BY MR. BRACCIO:

23 Q. Okay. Just a moment ago, Mr. Gruen, you indicated that you
24 recalled from the interview that Ms. Bowman asked these
25 children to take her out to the Choice Market parking lot to

1 show them where they were standing. Correct?

2 A. She did ask them to do that, yes.

3 Q. Let's pull up Exhibit 78, Page 28, Lines 15 through 27.

4 Back up a little bit. Go up to Line 12. Or 10.

5 Mr. Gruen, do you recall that you reviewed the Ray Lopez
6 interview with Leslie Bowman on January 20th, 1995 as part of
7 your review in this case?

8 A. Yes.

9 Q. Do you recall that the Lopez children were asked -- or Ray
10 Lopez in this case was asked about where he was and where the
11 van was?

12 A. I believe he was, yes.

13 Q. And the defense attorney, David Darby, in this case asked:
14 If we were to go and pretend we're going to the store and buy
15 Pepsi and gum and try to recreate what happened on that day,
16 could you tell us where you were and where your sister was and
17 where the van was and those things like that? Could you do
18 that? Is that what that says?

19 A. Yes, sir.

20 Q. So that indicates then that Ray Lopez told the defense
21 attorneys that he could show them in the parking lot where they
22 were in relation to that van in the parking lot, correct?

23 A. Yes, that says that's what he told them, yes.

24 Q. Now, returning to transcript April 7th, 1995.

25 MR. SANDMAN: Excuse me. I have to interpose another

1 objection. Because when the lawyers asked Ray Lopez whether he
2 could do that, he says no.

3 BY MR. BRACCIO:

4 Q. Keep scrolling down the screen, please.

5 THE COURT: It appears that he says yes on Line 25.

6 MR. SANDMAN: (Speaking away from microphone)

7 REPORTER: I'm sorry?

8 THE COURT: I think what he is doing is he's
9 withdrawing his objection.

10 MR. SANDMAN: Yes, sir.

11 THE COURT: Go ahead.

12 BY MR. BRACCIO:

13 Q. So, in that case, returning to the transcript for April
14 7th, 1995, at Page 41. Scroll up.

15 Do you see that this is a transcript for the beginning
16 cross-examination by Ms. Bowman of Laura Lopez?

17 A. Yes.

18 Q. Then Ms. Bowman indicates that Laura took them on a walk
19 and showed them the market and everything?

20 A. Yes.

21 Q. You didn't ask to -- I guess you did ask to speak to
22 Ms. Bowman, correct?

23 A. I did, yes.

24 Q. And she didn't return your call?

25 A. I believe I talked to her, but I don't remember what we --

1 I tried to get more detail from her, but I don't think I was
2 able to get that. But honestly I don't know, I don't know if I
3 was able to get anything or if I reached her, I don't recall.

4 Q. And you did not contact David Darby to get a more accurate
5 location of the Lopez kids in the parking lot?

6 A. No, sir, I did not.

7 Q. And you did not contact Dave McDonald about the location of
8 those kids in the parking lot?

9 A. No, sir, I did not.

10 Q. You did not ask the Federal Public Defender's office to
11 arrange for contact of any of those witnesses, correct?

12 A. That's correct.

13 Q. You did not question Barry Jones about where he
14 specifically saw them in the parking lot, correct?

15 A. That's correct, I did not.

16 Q. Because he indicated in the map that he drew that he did
17 see them, correct?

18 A. That's what the map shows, that they were at the corner of
19 the fence line at the top.

20 Q. Are you aware that the Federal Public Defender's office has
21 also had contact with Reynaldo Lopez as recently as 2009?

22 A. I believe so, yes.

23 MR. BRACCIO: Your Honor, may I approach the witness?

24 THE COURT: You may. Just make sure you're showing
25 opposing counsel before you show the witness.

1 MR. BRACCIO: I did about an hour ago.

2 THE COURT: You're aware of what it is.

3 Go ahead.

4 BY MR. BRACCIO:

5 Q. I'm handing you what has previously been marked as Exhibit
6 213. Have you reviewed this document in preparation for your
7 report?

8 A. Not from my report, no.

9 Q. Have you reviewed this document?

10 A. I did look at it this afternoon, yes.

11 MR. BRACCIO: Just for purposes of the record, Your
12 Honor, this was a document filed by the Federal Public
13 Defender's office. It's Docket 167-25, Exhibit 70, in the
14 record.

15 THE COURT: Okay.

16 BY MR. BRACCIO:

17 Q. You did not ask the Federal Public Defender's office to
18 speak to Reynaldo Lopez, did you?

19 THE COURT: I'm sorry. Did you identify what the
20 document is?

21 MR. BRACCIO: I apologize, Your Honor.

22 BY MR. BRACCIO:

23 Q. Can you identify what this document is?

24 A. It appears to be a signed witness statement of some type.

25 THE COURT: Hold on.

1 Mr. Sandman?

2 MR. SANDMAN: Your Honor, I doubt this witness has any
3 personal knowledge of that, but I will advise the Court that
4 this was a statement signed by Ray Lopez in the presence of our
5 investigator, Mr. Sowards, on March 26, 2009.

6 THE COURT: So I am really not sure you've marked it
7 for identification. He's indicated he's seen it before, he
8 didn't create this document, are you moving to admit it?

9 MR. BRACCIO: At this point I am moving to admit the
10 document, Your Honor.

11 MR. SANDMAN: We have no objection, Your Honor.

12 THE COURT: Okay. It's admitted.

13 MR. BRACCIO: I apologize, Your Honor. I jumped ahead
14 of myself there.

15 THE COURT: We need to make sure it's got an exhibit
16 number.

17 MR. BRACCIO: It does. Exhibit 213. It's been
18 previously marked.

19 THE COURT: So it was previously marked in the same
20 number scheme of all the exhibits in this case, so --

21 MR. BRACCIO: That's correct. It is Exhibit 213,
22 sequentially, for the exhibits for this hearing.

23 THE COURT: Marked by respondents or by petitioner?

24 MR. BRACCIO: Marked by our wonderful clerk.

25 THE COURT: Well, no, but only each side gets to

1 introduce an exhibit, and it's either, you know petitioner's or
2 respondents'.

3 MR. BRACCIO: This is Respondents' Exhibit 213.

4 THE COURT: Respondents' Exhibit 213.

5 There's a little commotion at your counsel table, so you
6 might want to confer with your colleagues before....

7 MR. BRACCIO: Your Honor, may I have a moment?

8 THE COURT: Yeah.

9 While he's doing that, Mr. Sandman, do you have another
10 witness after this?

11 MR. SANDMAN: We do.

12 THE COURT: Okay.

13 MR. BRACCIO: We'll move on from this point. This is
14 not a big deal.

15 THE COURT: If you're going to have him testify about
16 information that's in that document, at this point we're going
17 to mark it.

18 MR. BRACCIO: Correct. I'm not going to have him
19 testify to any information in the document. I'll withdraw my
20 question.

21 THE COURT: Sir, you can return the document.

22 MR. SANDMAN: Was the document admitted?

23 THE COURT: The document was -- well, I admitted the
24 document. He apparently now wants to withdraw --

25 MR. SANDMAN: If it's admitted, we would like it

1 admitted.

2 THE COURT: I've already admitted it. So get the
3 right number on it. He doesn't have to ask a question about
4 it. Do we have the appropriate number on it?

5 MR. BRACCIO: We do, Your Honor.

6 THE COURT: It's in. You can ask him questions about
7 it.

8 MR. BRACCIO: May I approach the witness, Your Honor?

9 THE COURT: You may.

10 MR. BRACCIO: I apologize for the confusion.

11 THE WITNESS: It's okay, sir.

12 BY MR. BRACCIO:

13 Q. From that document that you reviewed -- let's pull up
14 Exhibit 213, number four. Ray still indicates as of 2009 that
15 he saw the man inside the van swinging at something, correct?

16 A. Yes, sir.

17 Q. So, going back to your analysis, you have some pretty
18 imprecise variables for your opinion and you did no additional
19 investigation to get more accurate information, correct?

20 A. The thing you have to remember about the analysis is I am
21 saying what he could not see or what they would not have been
22 able to see. I don't know now what he's saying he saw, but
23 what my analysis showed is what he couldn't see at age eight.
24 So it's hard for me to speak to this now, after some years.

25 Q. But it would be important if an eyewitness saw something

1 inside of a van, and many years later he's still saying he saw
2 that same thing inside the van, correct?

3 A. I don't -- I don't see that as the crux. There's too much
4 time involved in all this for him to make an accurate
5 statement. He's saying now, but if I recall correctly, when he
6 was eight, he made three or four different statements. So it's
7 hard to bled credibility to what he's claiming he saw inside
8 the van now.

9 Q. Okay. It's your opinion that the Lopez children could not
10 have seen what they claimed to have seen, correct?

11 A. Yes, sir, based on my analysis, correct.

12 Q. And we previously saw the animation that you created,
13 correct?

14 A. Yes.

15 Q. And you had previously indicated that you could only maybe
16 see the head of the driver, correct?

17 A. I'm sorry, the head of the passenger, or of Rachel. You
18 can barely see a little piece of it in the animation.

19 Q. So you agree that you can see the passenger and the driver
20 in your animation.

21 A. You can see part of the passenger's head and you can see
22 the head of the driver in the animation, yes.

23 Q. So that animation shows that the Lopez children, based upon
24 your calculations, could have seen inside that van, correct?

25 A. No, the animation is not showing that. What the animation

1 is showing is the relative position of the witnesses looking
2 into the van and the height of the van, but not the -- in other
3 words, I couldn't duplicate the darkness of the van in the
4 animation. So the information I drew from primarily was what I
5 did at the tow yard.

6 Q. I understand, and I think this was the point Your Honor was
7 making earlier. Based upon the angle in the line of sight --
8 we'll talk about the lighting in a moment here. But based upon
9 the angle in the sight, the Lopez children could see inside
10 that van and could see both the passenger and the driver,
11 correct?

12 A. Yeah, based on the animation, yes.

13 Q. And you indicated that you're basing your opinion on the
14 ever-changing light conditions, correct?

15 A. Yes.

16 Q. You haven't produced any video that would show that
17 perspective to the Court, correct?

18 A. I have not.

19 Q. And there is really no analysis, other than your opinion of
20 the lighting conditions, correct?

21 A. Well, the information that came generally from the fact
22 that the lighting conditions were sunny, bright and sunny.

23 Q. Would you agree with me that there are no cracks in the
24 windows of this van?

25 A. Yeah, that's correct.

1 Q. Let's pull up Exhibit 18.

2 THE COURT: Already admitted?

3 MR. BRACCIO: Yes, this is in evidence.

4 BY MR. BRACCIO:

5 Q. Mr. Gruen, what I am showing you are the photos of the van
6 taken by the original trial investigator, George Barnett. You
7 have seen these photographs as part of your review in this
8 case, is that correct?

9 A. Yes, sir.

10 Q. Let's go to Bates Number 270, and the top picture. We're
11 going to make this a little bigger to see it.

12 You agree with me that there are no cracks in the windows
13 of this van, correct?

14 A. Are you speaking of all the windows or the front
15 windshield?

16 Q. Let's talk about the front windshield.

17 A. Yeah, I don't see any in there, and I don't recall seeing
18 any when I did my analysis either.

19 Q. Okay. Thank you.

20 And you believe there's tint on the windows of that van,
21 correct?

22 A. I believe there was some form of a factory tint on those
23 windows. I was never able to confirm that information, but I
24 know the tinting's been around a long time, so I think there
25 was some factory tinting at least on the side windows.

1 Q. You didn't do any test for that tint, did you?

2 A. I didn't have a tint meter, so I did not, right.

3 Q. You didn't check with the manufacturer for the tint?

4 A. I tried to do some research on the Net, I didn't call Ford
5 or anything. But I tried to find out some information about
6 the van specifically, but I wasn't successful in doing that.

7 Q. So your observation -- I'm sorry. Your description of the
8 tint is based on your observation alone, correct?

9 A. Yes, sir, my observations that I saw at the tow yard, yes.

10 Q. Now, you claim that these changing light conditions are one
11 of the determining factors as to why these kids could not see
12 inside the van, correct?

13 A. Yes, sir.

14 Q. And the lighting conditions of the van are obviously going
15 to change depending on the time of day you took your photos,
16 correct?

17 A. Well, yes, that's correct.

18 Q. Let's pull up Exhibit 110A. 3937.35.

19 Just for the record, while he's adjusting this picture,
20 these were the photographs that you took, correct?

21 A. Yes, sir, it looks correct.

22 Q. Exhibit 110, photos taken by Mr. Gruen.

23 All of these photos you took are on a flat surface,
24 correct?

25 A. Yes, sir, that's correct.

1 Q. Would you agree with me that you can see right through that
2 window, the windshield?

3 A. Yes, sir, you can see through the windshield, yes.

4 Q. Go to the next one. Let's pull up Bates Number 3937.36.

5 Do you recall during our interview that I asked you about
6 this picture?

7 A. Yes, sir.

8 Q. You agreed with me that you can see all sorts of things
9 inside that van, correct?

10 A. You can see outlines of things, yes. You can see a little
11 bit in there, yes.

12 Q. You agreed you could see the steering wheel?

13 A. Yes, sir.

14 Q. You agreed you could see the upper portion of the passenger
15 seat?

16 A. Yes, a little bit of the outline, a little bit of the upper
17 portion, yes.

18 Q. You could see the cup there on that dash?

19 A. At the time I didn't know it was a cup, but, yes, I can see
20 it now, yes.

21 MR. BRACCIO: Go back to 35. Pull up Bates number
22 3937.35. I'm sorry. 3937.37.

23 THE COURT: Before you do that, you may have asked
24 this question, or it may have been testified before, this is
25 Mr. Barnett's photo?

1 MR. BRACCIO: No, these are the photos Mr. Gruen took.

2 THE COURT: Oh, you took these photos?

3 THE WITNESS: Yes, sir.

4 BY MR. BRACCIO:

5 Q. Again, pretty clear view through that van?

6 A. I don't see it as a clear view. I am not seeing enough
7 detail inside the van. So I don't see it as a clear view.

8 Q. Now, you reviewed the photos taken by George Barnett, the
9 original trial investigator in this case, correct?

10 A. Yes, sir.

11 Q. Let's pull up Exhibit 18. Bates 267. That may be it.

12 These pictures of the van are probably better pictures in
13 this case because they're closer in time to the crime, correct?

14 A. Well, the picture was taken closer in time, yes, sir.

15 Q. They haven't been sitting out in an impound lot for 14
16 years being weathered.

17 A. Correct.

18 Q. Based upon this picture, would you agree with me that the
19 angle looks to be lower than the windshield?

20 A. The angle of the photo is lower than the windshield yes,
21 sir.

22 Q. Correct. In this photo you can see on the passenger seat
23 the cut-out swatch on that passenger seat, correct?

24 A. Yes, sir.

25 Q. So based upon your earlier testimony that Rachel Gray's

1 head would have been even two to three inches higher than that
2 swatch, you would have been able to see Rachel Gray clearly
3 through this photo, correct?

4 A. If she was in the vehicle at the time this photo was taken,
5 yeah, I think you would be able to see her in there.

6 Q. Sitting down.

7 A. Yes.

8 THE COURT: Counsel, maybe you can inquire or I'll
9 just ask you: Do you know the distance that Mr. Barnett was
10 when he took this picture from the van?

11 THE WITNESS: No, sir. I don't know the distance and
12 I don't know the height.

13 THE COURT: The time of day.

14 THE WITNESS: Any of that information.

15 THE COURT: Lighting.

16 THE WITNESS: That's correct, I don't have any of that
17 information.

18 THE COURT: Go ahead.

19 BY MR. BRACCIO:

20 Q. You previously indicated that you did not attach to your
21 report any pictures of Reynaldo and Laura Lopez looking
22 straight on in the van, correct?

23 A. You mean from my photos?

24 Q. Correct.

25 A. Yes, sir, that's correct.

1 Q. And you said you did not include any of those because there
2 was no point where the van was straight towards them relative
3 to the van, correct?

4 A. Yes, sir, I think that the van itself, given the distances
5 that I was, I wouldn't assume the children would be in front of
6 the van while it's traveling some speed. So the information I
7 used was where they said they were based on the angle of the
8 van to the windshield, in other words, the line of sight. So I
9 never had information they were in front of the van.

10 Q. I am not sure that was my question. Let me see if I can
11 ask it again. You indicated that you didn't include any photos
12 looking front on from the van because there was no point where
13 the van was straight towards them, correct?

14 A. Yes, sir, that's correct.

15 Q. And you previously indicated you read the trial transcripts
16 in this case?

17 A. Yes, sir.

18 Q. Do you recall reading that both Reynaldo and Laura
19 testified that they saw Jones hitting Rachel through the front
20 windshield?

21 A. I don't recall that directly, but --

22 Q. Let me refresh your recollection. Let me pull it up. This
23 is transcript April 7th, 1995. Starting with 30, Lines 1
24 through 4. This is the testimony of Reynaldo Lopez in the
25 Barry Jones trial.

1 Reynaldo was asked whether he saw the man hitting the
2 little girl, just through this front window right here, and he
3 said yes. Correct?

4 A. Yes.

5 Q. Page 36, Line 8 through 11.

6 And Laura was asked whether she saw the guy in the yellow
7 van hitting the little girl through any of the windows, and she
8 said the front windows. Correct?

9 A. Yes, sir.

10 Q. Page 43, Lines 13 through 15.

11 Again, Laura was asked: When you saw the man, you saw him
12 through the front window? And she replied: Yeah.

13 A. Yes, sir.

14 Q. And she was even asked to clarify, not through the side
15 window, and she answered: No.

16 A. Yes, sir.

17 Q. Referring back to your report, Exhibit 110, Bates 3934. Go
18 up a couple.

19 In your analysis, you determined that Mr. Jones was driving
20 the van off of Earp Boulevard and entered the Choice Market
21 parking lot, correct?

22 A. Yes, sir, that's correct.

23 Q. So driving straight on Earp Boulevard, as it turns into the
24 parking lot, no matter where those kids are standing in that
25 parking lot, the vehicle will be directly facing them at the

1 front at some point, correct?

2 A. Can you restate -- can you ask that question again, please?

3 Q. Absolutely.

4 Mr. Jones is driving his van on Earp Boulevard, correct?

5 A. Correct.

6 Q. Traveling in a northwestern direction?

7 A. Yes, sir.

8 Q. As he enters the Choice Market parking lot, correct?

9 A. Yes.

10 Q. So anywhere those kids are standing in that parking lot,
11 either up along the fence line or into that parking lot, at
12 some point that van is going to be directly facing those kids,
13 would you agree with me?

14 A. At some point, yes, that would be correct.

15 Q. Even your own animation reflected that, correct?

16 A. Yes, that's correct.

17 Q. Based upon all the information you had available to you,
18 there is no doubt that Barry Jones was driving the yellow van
19 with Rachel that day, May 1st, 1994, in the Choice Market
20 parking lot, correct?

21 A. Yes, sir, based on the information I had available,
22 correct.

23 Q. And he drove right by Reynaldo and Laura Lopez, correct?

24 A. Yes.

25 Q. Based upon the map that was represented to you to be drawn

1 by Mr. Jones, Jones admits that he saw the Lopez children in
2 the Choice Market parking lot, correct?

3 A. Yes, sir, that's what it says on the map, correct.

4 Q. And you also noted that in your report, correct?

5 A. Yes, sir.

6 Q. You noted in a document provided by Barry Jones, he
7 indicated that he first observed the children in the western
8 most part of the parking lot at the fence corner near Earp
9 Boulevard, correct?

10 A. Correct.

11 MR. BRACCIO: Your Honor, can I have a moment?

12 THE COURT: You may.

13 MR. BRACCIO: No further questions. Thank you,
14 Mr. Gruen.

15 THE COURT: Redirect?

16 REDIRECT EXAMINATION

17 BY MR. SANDMAN:

18 Q. Mr. Gruen, I want to direct your attention to Exhibit 213.
19 This was the statement signed by Ray Lopez on March 26, 2009 --

20 THE COURT: You may want to hold on. He
21 doesn't have --

22 MR. SANDMAN: Oh, he doesn't have it anymore?

23 THE COURT: The exhibit is not up.

24 MR. SANDMAN: Do you have another copy of that?

25 MR. BRACCIO: What is that?

1 MR. SANDMAN: 213.

2 May I approach, Your Honor?

3 THE COURT: You may.

4 THE WITNESS: I have two of them.

5 THE COURT: Are they two of the same thing?

6 THE WITNESS: Yes, sir.

7 THE COURT: They both have the same number on them?

8 THE WITNESS: Yes, sir.

9 BY MR. SANDMAN:

10 Q. I'd like to direct your attention to the paragraph numbered
11 four, which reads: I saw the man making swinging motions, but
12 did not see what he swung at, nor did I see anyone else in the
13 van.

14 Do you see that?

15 A. Yes, sir.

16 Q. Does that statement by Mr. Lopez support the finding that
17 you reached in this case that Mr. Lopez would not have been
18 able to see the driver of the van striking anyone else in the
19 van?

20 A. Yes, sir, it does.

21 Q. Now, I had a couple questions about slope. Is the slope
22 near zero?

23 A. It's near zero, yes, correct.

24 Q. Would that slope near zero have influenced or did it
25 influence any of your opinions or findings in the case?

1 A. No, nothing. Nothing on the slope.

2 Q. You were asked some questions about, well, you did a line
3 of sight investigation but there was no crash, do you remember
4 that?

5 A. Yes, sir.

6 Q. Do you do a line of sight investigation differently when
7 there is a crash than when there is not a crash?

8 A. The line of sight analysis is the same.

9 Q. You were asked some questions about the similarities or
10 differences in the parking lot between 1994 and -- I think it
11 was 2009 when you were out there. Is that right?

12 A. Yes, sir.

13 Q. Can we take a look at Exhibit 94. It's in evidence.
14 Your Honor, Exhibit 94 was Trial Exhibit 195.

15 THE COURT: It's already admitted?

16 MR. SANDMAN: Yes.

17 THE COURT: Okay. Go ahead.

18 BY MR. SANDMAN:

19 Q. I'm showing you what's in evidence as Exhibit 94. This was
20 a photograph taken in 1994.

21 Do you see the dirt parking lot there on the -- runs along
22 the side of the Choice Market?

23 A. Yes, I do.

24 Q. Does that appear to you to be in the same condition as it
25 looked when you were out there?

1 A. Yes, sir, it does.

2 Q. Now, there are a lot of questions about, you know -- and I
3 thought we had covered this, but there were a lot of questions
4 just asked of you about the speed of the vehicle and where the
5 kids were in relation to the van, and, if we change those
6 variables, does that affect your opinion at all in this case?

7 A. It does not.

8 Q. You were asked some questions about, well, did you check
9 with Leslie Bowman where the kids said they were standing and
10 did you ask this person or that person, do you remember those
11 questions?

12 A. I do, yes, sir.

13 Q. What you did rely on was testimony under oath given at the
14 trial in terms of where the location was, is that correct?

15 A. Yes, sir, I tried to, correct.

16 Q. And whatever the location was, I think you've said it
17 doesn't matter to your opinion, correct?

18 A. That's correct.

19 Q. Now, you were asked some questions about your -- some
20 assumptions that you tend to make about eyewitness testimony.

21 A. Correct.

22 Q. You were a Highway Patrol officer for how many years?

23 A. I was with the Highway Patrol for 17 and a half years.

24 Q. Unfortunately, you probably had to recreate a scene of many
25 collisions.

1 A. Yes, sir, that's correct. Investigate the scene of many
2 collisions, yes, sir.

3 Q. You would have to talk to people about what they saw or
4 what they think they saw, what they thought they saw, correct?

5 A. Yes, sir, that's correct.

6 Q. And you would have to talk to bystanders about what they
7 thought they saw.

8 A. Yes, sir, that's correct.

9 Q. Then you would take those statements and you would examine
10 the physical evidence, would you not?

11 A. Yes, sir, that's correct.

12 Q. And would it be the case that -- well, tell us, what
13 frequency would you find that the reports of the witnesses were
14 at variance with what the physical evidence showed?

15 A. I would say something akin to like 80 percent of the people
16 that I spoke with had a different impression or saw something
17 different, or actually didn't see anything but reported that
18 they did. So there was a lot of incidence of that.

19 Q. You were asked some questions about, well, doesn't the
20 animation show that the children could see in the van. Could
21 they see the driver hitting the chest of the child?

22 A. No, they wouldn't have been able to.

23 Q. Could they see the driver hitting the face of the child?

24 A. No.

25 Q. Just back quickly just to Exhibit 18, the bottom photo

1 there. You don't know what height the camera was, whether it
2 was a four-foot one-inch?

3 A. Correct, I don't know what height this was taken at.

4 Q. Do you have any evidence or information that the children
5 at any time were standing at that location in front of a moving
6 van?

7 A. I have no information that that was the case, that is
8 correct.

9 Q. And if they were standing at that location in front of a
10 moving van, what would happen?

11 A. Well, we're going to have a lot of problems, the van is
12 going to run over them.

13 MR. SANDMAN: That's all I have, Judge.

14 THE COURT: Thank you. All right. You may step down,
15 sir.

16 THE WITNESS: Thank you, sir.

17 THE COURT: I don't know whose exhibits he's got
18 there, so you might want to grab your exhibits.

19 We are going to take a 10-minute break and then we'll have
20 your next witness.

21 (A recess was taken from 4:04 p.m. to 4:19 p.m.)

22 THE COURT: Mr. Sandman, your next witness.

23 MS. SMITH: Your Honor, we're calling Dr. Patrick
24 Hannon.

25 THE COURT: Sir, if you could just come and stand in

1 the witness box there and Madam Clerk will swear you in.

2 THE CLERK: Please raise your right hand.

3 **PATRICK R. HANNON**, WITNESS, SWORN

4 MS. SMITH: Just for the record, Your Honor,
5 Dr. Hannon is available this afternoon and tomorrow morning if
6 we need him to come back.

7 THE COURT: Well, you all are asking the questions.

8 MS. SMITH: We just wanted you to know.

9 DIRECT EXAMINATION

10 BY MS. SMITH:

11 Q. Could you please state your name for record.

12 A. Yes. It's Patrick Roy Hannon, H-a-n-n-o-n.

13 Q. Thank you. Thank you for being here today, Dr. Hannon.
14 Could you tell us how you're currently employed.

15 A. Currently, I have my own business. Hannon Biomechanics
16 Analysis. I've been doing this work for a little over 29 years
17 at this point.

18 Previously I did my university teaching and my expert
19 witness work, now it's simply expert witness work. And then
20 likewise I have some other sources of income.

21 THE COURT: I think you may be a little too close to
22 that microphone. It's distorting a little bit. Go ahead.

23 THE WITNESS: All right.

24 MS. SMITH: Is that better? All right.

25 BY MS. SMITH:

1 Q. Could you tell us about your educational background,
2 please.

3 A. Yes, I have a bachelor's degree from Northern Arizona
4 University, 1969. In 1970, I received my MA degree, my Master
5 of Arts degree, in Exercise Science, also at Northern Arizona
6 University. At that point, I started on a Ph.D. program at the
7 University of Iowa; I spent one year there and three more
8 summers. And at that point in time though, after that one year
9 at Iowa, I took a position at Middle Tennessee State
10 University. But to finish up my education, in 1980, I finished
11 my doctorate degree, an Ed.D., a Doctor of Education degree, at
12 the University of Northern Colorado, in Greeley, Colorado.

13 That's my formal educational background.

14 Q. Could we take a look at Exhibit 118.

15 Dr. Hannon, I believe this is the cover page to your CV.
16 If we go to Page 3, we'll start to see some of your background,
17 is that accurate?

18 A. Yes, that is accurate.

19 Q. Then could you just -- we don't need to go page through
20 page through this. Could you give us an overview of your
21 employment since you finished your formal education to now.

22 A. Yes. In 1973, I started at Middle Tennessee State
23 University. I taught there for eight years as an instructor
24 and then was promoted to assistant professor, and that was in
25 the area of physical education.

1 In 1980, I completed my year's residency at the University
2 of Northern Colorado, finished my doctorate in the summer of
3 1980, and was offered a position back at my alma mater, at
4 Northern Arizona University at assistant professor level. That
5 was also in the area of, at that point, physical education and
6 exercise science, because I had my doctorate in exercise
7 science at that point.

8 And in turn then, I taught some 28 years at Northern
9 Arizona University, retiring in 2008, albeit a little bit
10 early, at the age of 61.

11 During that time period also, Ms. Smith, I taught one year
12 at Montana State University on a faculty exchange. Then
13 additionally, I had a six-month sabbatical at Thomas Jefferson
14 Medical School, the Department of Neurology, and that was 1991.
15 Q. Great.

16 Are you currently a member of any professional
17 organizations?

18 A. Yes. I am a member of SATAI, Southwestern Association of
19 Traffic Accident Investigators. However, I limit my area to
20 biomechanics, functional anatomy, and neurosciences. I am also
21 a member of the American Society of Biomechanics, ASB. The
22 International Society of biomechanics. Those are the primary
23 organizations that I am involved in.

24 Q. Do you know Paul Gruen through SATAI?

25 A. Yes, I do, through the Southwest Accident Investigators

1 Association, SATAI, I do. That's when I first met Paul,
2 probably 15 years ago.

3 Q. Have you appeared before as an expert in court?

4 A. Yes. In terms of trial testimony, probably on the order of
5 about 200 appearances over the past 29 years.

6 Q. I think you might just need to lean back a little bit
7 again.

8 A. I'll try to get back again. Usually people have a hard
9 time hearing me, but I'll pull back.

10 Q. In what areas have you previously been qualified as an
11 expert?

12 A. In the areas of biomechanics, including injury
13 biomechanics, structural and functional anatomy. Then likewise
14 in some neurosciences issues, because of the fact that I taught
15 and published in the area of neurosciences.

16 Q. You have reviewed some materials related to this case?

17 A. I have.

18 Q. And you authored a report?

19 A. Yes, ma'am.

20 Q. Could we take a look at Exhibit 119, please.

21 Can you identify what we see on the first page here,
22 Dr. Hannon.

23 A. Yes, this is an affidavit of my opinions that was produced
24 before my report, as I recall.

25 Q. Can we take a look at Page 23.

1 Can you identify this document, Dr. Hannon.

2 A. Yes, that is my report of May 7th, 2010.

3 Q. Can we take a look at the next page, please.

4 All right. Starting on Page 2 and going on to the
5 following page, you list materials that you've reviewed in this
6 case, is that correct?

7 A. Yes. Yes, ma'am.

8 Q. Does this include all of the materials that you've
9 reviewed?

10 A. Yes. Back -- and that was at the point of, again, 2010,
11 prior to issuing that report.

12 Q. Have you subsequently met with Mr. Gruen about this case?

13 A. Yes, on two or three occasions. The last time being, let's
14 see, I believe it was July of this year, 2017; again, at
15 another conference.

16 Q. Okay. Included in the materials that you reviewed was the
17 testimony and the pretrial statements of the Lopez children,
18 Ray and Laura Lopez?

19 A. Yes.

20 Q. And you also reviewed Mr. Gruen's report and some photos
21 that he took?

22 A. I did.

23 Q. Have you recently reviewed some additional materials or
24 some other evidence other than what's listed here?

25 A. Yes. Again, first of all, I was able to go ahead and take

1 some measurements on Mr. Barry Jones, and that was in early
2 October, I believe the 5th of October, some anthropomorphic
3 measurements.

4 Additionally, Ms. Smith, I was able to go ahead and examine
5 the actual pry bar, or nail puller, as the case may be.
6 Including taking its weight, its measurements, and photographs
7 as well.

8 Q. We'll get into that in a bit more detail in a bit.

9 Have any of these materials that you've recently reviewed
10 changed the opinions that you rendered in your report in 2010?

11 A. No, they have not.

12 Q. In addition to reviewing the materials from the records
13 that are listed here and meeting with Mr. Gruen, did you also
14 conduct your own investigation involving the Ford van?

15 A. Yes, I did. And I believe that was October 27th, yeah,
16 2009. So that was subsequent to Mr. Gruen's examination of the
17 van. Both of us, however, did examine the van in impound, not
18 the van in the setting of the Choice Market.

19 Q. When you reviewed the van in the impound lot, were you able
20 to pull it out or did you have to take photos based upon where
21 it was located at the time?

22 A. On one side, Ms. Smith, the driver's spot was blocked by
23 another vehicle, and so what we needed to do was go ahead and
24 take our photos from the front, but also to the side, looking
25 through the passenger side window, front passenger side window.

1 As opposed to the driver's side passenger's side window.

2 Q. Got it.

3 And I believe Mr. Gruen may have been able to pull a few
4 more strings and get the van pulled out. Are you aware that he
5 took photographs that went all the way around the van?

6 A. Yes. Or at least a couple of things, either at that point
7 the van was not blocked by another vehicle, or, again,
8 Mr. Gruen has been in law enforcement for a lot of years and
9 was able to get some things done.

10 Q. We understand.

11 Can we take a look at the bottom of Page 25, which I think
12 is on the screen now. Can you enlarge the last few lines on
13 that page. Could you go a little bit higher than that? Sorry.
14 If possible, could you continue on to the top of the next page.
15 I'm sorry. I'm asking a lot. Yeah, starting about five lines
16 from the bottom, and then a few lines onto the next page would
17 be great. Thank you, very much.

18 Do you see here in your report you concluded here that
19 observation by the Lopez children would have been initially
20 through the van windshield and then in a later point in time
21 through the side driver's door? Factors such as changing
22 angles of the children's line of sight relative to the X and Y
23 axes of the vehicle, reflected light contrast, vehicle
24 obstructions, for example, vehicle A pillars...I'll let you
25 explain that...the general lighting environment, and the

1 positions of Barry Jones and Rachel Gray within the vehicle
2 relative to the vehicle dashboard and the driver's side door
3 panel prevented a clear unambiguous observation by the two
4 Lopez children.

5 A. Yes.

6 Q. Can you explain a little bit more for us the basis for this
7 opinion?

8 A. Sure. Well, initially the children, depending on when they
9 were alerted, when the van pulled into the one side of Choice
10 Market and began to travel towards the front, the Lopez
11 children, if they were alerted in time -- and I understand they
12 were trying to cross to get to the market -- they would have
13 been able to see through the van windshield.

14 Now, this, again, is 70 to 80 feet away, so there are some
15 problems in terms of acuity at that distance. That's a
16 considerable distance, that's not 20 feet away. But their
17 perspective there would have certainly been better at that
18 point in time, when the van was somewhat facing them, an
19 oblique view, but some 65, 75, 80 feet away looking through the
20 windshield.

21 As the van approaches, that view would have become more and
22 more unavailable, so to speak; distorted, glare. But also, as
23 the van approached them, they would have had perspective error.
24 Again, this is based on an approximate eye height of the Lopez
25 children, and I chose 46 inches as the approximate eye height.

1 And from that perspective, looking through, now, not so
2 much the windshield, but the driver's side front side window,
3 the perspective error would have been considerable. They still
4 would have been able to see Barry Jones. And, you know, even
5 at that point in time there was a certainly an opportunity to
6 see the face or head of Rachel Gray, except at a point where
7 Barry's head or body would have blocked that view.

8 So the point being, is, again, looking through the side
9 window at that point would have presented some real problems.
10 Not because of the distance, which could have been an
11 estimate -- I use 26 feet, in terms of an approximate distance
12 or displacement between where the children were approximately
13 looking through the driver's side window -- but the problem
14 was, was at their line of sight. You know, that windowsill
15 exceeded their height.

16 Q. Let's just break that down a little bit. You said that
17 when you were approximating their distance from the driver's
18 side window, you used 26 feet, did that depend on some findings
19 of Mr. Gruen?

20 A. Yes. In terms of, again -- and I think he was basing, you
21 know, his distance measurement, so to speak, in terms of where
22 the children said they were, approximately in the middle of the
23 lot, and then likewise the proposed path that Mr. Gruen opined,
24 that the shortest distance would have been approximately 26
25 feet.

1 Q. Thank you.

2 You said that you chose a height of 46 inches for the
3 children's line of sight. There is evidence in the record that
4 the children were 49 inches -- Ray Lopez was said to be 49
5 inches tall. Does that account for the difference between the
6 top of the head and where the eyes would be?

7 A. Yes. And I understand that Reynaldo Lopez was a little bit
8 taller. His school records seem to indicate that he was
9 perhaps at, you know, 51, 52 inches, and that would have put
10 him up a little bit, at around four-foot-three, and so on.
11 Laura was a little bit shorter, but I didn't have a hard number
12 on Laura Lopez.

13 So I subtracted the distance from the top of the calvarium,
14 the vertex, down to eyesight.

15 THE REPORTER: "So I subtracted the distance from the
16 top of the..."?

17 A. The vertex down to eye level, and that gave me a line of
18 sight.

19 Q. At 46 inches approximately.

20 A. At 46 inches.

21 Now, again, that's the line of sight. That doesn't imply
22 that one cannot see above or below that level. Because with
23 peripheral vision you are able to see from side to side and
24 above and below to a greater degree than simply your eye
25 height.

1 Q. Right. You took some photographs as part of your analysis
2 in this case?

3 A. Yes, ma'am.

4 Q. And when we're talking about your line of sight and using
5 46 inches, was that used to place the camera in your photos?

6 A. Yes, precisely. The camera lens was placed at 46 inches
7 high.

8 Q. Let's take a look at Page 51 of this exhibit. If we could
9 enlarge the bottom photo here actually.

10 What we see here is a note pad with some writing on it,
11 correct?

12 A. Yes, that's my writing. Yes, ma'am.

13 Q. What is the note pad describing?

14 A. What it describes is that I've taken a measurement from the
15 van, van itself, van driver's side door, of 60 feet, and then
16 also that this view, the camera view, is at 46 inches. And, of
17 course, I actually snapped a picture at that point.

18 Q. I believe the photograph corresponding to that is on the
19 following page.

20 A. That's right.

21 Q. Could we go to Page 52. Yep, the top one, please.

22 Okay. So, Dr. Hannon, this is a photo that you took in the
23 impound lot?

24 A. Yes, it is. And you can see I've laid out the tape there,
25 albeit it's not perfectly taut, it's an approximate

1 measurement, but I am at a 60-foot displacement at that point
2 and viewing the van.

3 Q. What was the basis for a 60-foot displacement? Was that
4 based upon when the children might have been able to see
5 through the windshield as opposed to the side window?

6 A. Yes, when the van first entered. If we make the
7 assumption, Ms. Smith, that they were alerted, or at least
8 Laura was alerted at that point and then subsequently alerted
9 her brother, Reynaldo, at that point, you know, traveling 15 to
10 20 miles per hour, this would be the approximate initial view.
11 So the van enters 70, 80 feet away at approximately 60, 70
12 feet, this is 60 feet, this is the still image of what they
13 would see. Again, this is not a dynamic video, this is a still
14 image.

15 Q. I believe you've explained that from this farther distance
16 we have less perspective error, is that correct?

17 A. Yes, when the distance is greater there is less perspective
18 error, and that's a plus in terms of viewing. Of course,
19 there's a minus side as well.

20 Q. Can you just explain to us what you mean by "perspective
21 error" quick.

22 A. Yes. In terms of line of sight, as an object gets closer,
23 acuity gets better. Okay. We reduce the displacement, we have
24 better acuity. But the perspective in this sense, in my report
25 what I was talking about is the ability to see the interior of

1 the van. So that's a little different than perspective error
2 in terms of what a photographer might talk about, and depth of
3 field.

4 What I am talking about in terms of perspective error is
5 the perspective of being able to see inside the van as the van
6 gets closer from a particular observation point.

7 Q. A moment ago, before I interrupted you, you said there were
8 some minuses to being at a further distance as well?

9 A. The minuses would be in terms of the acuity. Again, as
10 humans, we certainly can't see at 80, 70 or 80 feet, what we
11 can see at 20 feet.

12 And it's not just acuity, because that doesn't tell the
13 whole story, it's also perception. So, you know, when that
14 image goes back to the visual cortex, you've got to make some
15 sense of it, and there is more room for error when that object
16 or what you're observing is in fact 70, 75 feet away.

17 Q. In terms of this perception error that you're talking
18 about, do you have any knowledge about whether there is any
19 variability between children and adults?

20 A. In terms of?

21 Q. Ability to perceive.

22 A. Yes. In terms of ability to perceive, it's an immature
23 visual system. And I should clarify. Again, acuity is
24 actually quite good in eight- or nine-year-old children. So
25 that's really not the problem.

1 The problem is, is that in terms of the visual cortex
2 association areas, that nervous system is not completely
3 myelinated, it's immature. And so, in other words, making
4 sense. The short answer is making sense of what you do see.
5 Although the acuity may be good, it falls right back on the
6 fovea, the cornea, the lens are working properly, there is good
7 acuity; the biggest problem is the visual association areas,
8 making sense of what you see.

9 Q. In maybe more simplistic terms, that means it might take
10 the Lopez children a little longer to register what they're
11 seeing?

12 A. Absolutely, yeah. And to make sense of it. So making,
13 one, an accurate observation, but also reaction time.

14 And you haven't asked me about that, but reaction time is
15 not as quick in young children as it is in an 18- or
16 19-year-old.

17 Q. Can you just explain how reaction time might factor into
18 this case?

19 A. Well, reaction time in terms of you see something that
20 needs to alert you and then how you respond to it, you know,
21 that time can be lengthened. I think the most important
22 variable in this case is being alerted, getting that image
23 focused on the fovea of the eye so that you're really focused
24 on it, and then the biggest problem is interpreting what you
25 see. At least the best evidence that we have is that that can

1 be a problem for anybody, including adults. More of a problem
2 in terms of an immature visual system.

3 Q. If the Lopez children were only observing -- only had the
4 ability to observe this for a short period of time, would that
5 complicate things?

6 A. It would complicate the observation for anyone.

7 Q. Yeah.

8 A. I think that's probably the best way to put it.

9 In terms of the interpretation, that depends upon the
10 maturation of the visual system, but it also depends upon life
11 experiences and their level of mentation. So all of those
12 things come into play.

13 But even in grown adults, when one observes an event over
14 two-and-a-half seconds to three-and-a-half seconds, it's been
15 my experience over close to 30 years that there can be a lot of
16 problems; and witness reports, as a result, vary considerably.

17 Q. I just wanted to clarify one thing you just said. You
18 mentioned that younger children don't have acuity issues in
19 terms of being farsighted, I guess. Or nearsighted.

20 A. Actually, nearsighted. The myopia has not developed yet,
21 so their vision is actually quite good on the whole.

22 Q. Would acuity nonetheless, in general, be an issue if you're
23 at a distance of 60 feet or so?

24 A. Yes. So even though you would expect if they fall into --
25 a large percentage of children between the ages of six and

1 eight have at least 20/20 vision, they have good acuity. The
2 problem is, is really making sense of it.

3 And then the other problem you just pointed out is,
4 regardless, when that object is 80 feet away, you don't see at
5 80 feet what you see at 20 feet, and that's for anybody.

6 Q. Great.

7 And I guess that might take us back to this photo in front
8 of us. Can you describe what you can see in this photograph.

9 A. Well, I see through the front windshield, I can see
10 outlines.

11 Again, you know, on the screen here, if this was a very
12 clear picture, it might be a little bit better. But in looking
13 simply at this JPEG photo on the screen, I can see certainly
14 the outline of especially the passenger side seat, but it's not
15 a real good view. And I might note that certainly through the
16 side window, because of the perspective, because of glare, that
17 driver's side window, which is up, gives a very poor view at
18 this point.

19 Q. Could glare also be an issue on the windshield?

20 A. Yes, it could, depending upon the time of day, the amount
21 of sunlight, and so on. But so darn many variables, I think to
22 try and quantify that and establish an opinion in terms of how
23 much glare we have, how much dust was being kicked up, I think
24 it would be a disservice to the trier of fact.

25 Q. Fair enough.

1 A moving van in the daytime, however, glare could
2 potentially be an issue at some point when the kids are viewing
3 the van.

4 A. Absolutely.

5 Q. All right. Let's take a look on the photograph that's on
6 the bottom of that page. I think we -- yeah, there we go. If
7 we could blow up that note pad.

8 You might have to read your handwriting for us.

9 A. Yes. I've got 60 feet, 46-inch height. And that is the
10 camera height. And then I put, "Pat," my name, "in seat
11 lateral flexion." Lateral flexion is an anatomical motion that
12 involves bending to one side.

13 Or bend to my left side. I think it's a little bit easier
14 for the Court to see, if I bend this way, that's lateral
15 flexion. If I bend forward like that, that's regular flexion
16 in the sagittal plane. Lateral flexion is in the coronal
17 plane.

18 Q. And we'll discuss why you're leaning this way in a little
19 bit more detail in a moment, but were you attempting to
20 approximate some of the things that were described by the
21 children when they were viewing -- allegedly viewing Barry and
22 Rachel in the van?

23 A. Yes, that's right, and so photographs were taken of me in
24 the van.

25 Q. Okay. Let's take a look at the picture that corresponds to

1 that. It's on the top of this page.

2 All right. Again, I apologize for the quality of the image
3 that's seen on the screen, but can you tell us what you see in
4 this photo?

5 A. Well, in this one I see -- I do see the driver's side seat
6 back by the A pillar. And that's on the driver's side, that's
7 that pillar between the windshield and the side window. I also
8 can see the passenger side seat. It appears -- and I think the
9 resolution could be a little bit better, but it appears that I
10 am leaning to the right in this case. And you can see my head,
11 it looks like from this perspective, right in the middle of the
12 van. In reality, it was a little bit more to the right, but
13 pretty close to the middle. And I am leaning. And I believe I
14 have my elbow up, my right elbow up, although I can't see that
15 from this position.

16 Q. If we take a look at the photo on the bottom of the page, I
17 think this is just zooming in using your camera, just so we can
18 see a little bit better what you were doing there.

19 A. Yes. And I can see, in this case, I see my left arm
20 holding onto the steering wheel. And you can see my elbow
21 sticking up over the steering wheel and my head is turned to
22 the side so that the left side of my face is exposed. And
23 although the resolution doesn't give a real clear picture of my
24 elbow, my elbow is actually up. So I've lifted -- I've
25 abducted the elbow.

1 Q. Just to clarify, this is a zoomed-in photo. This one is
2 not representative of what you think the Lopez children would
3 have seen.

4 A. That is correct. I think I had my 55 -- pardon me --
5 55 200 lens on the camera at this time.

6 THE COURT: Did you testify as to what the resolution
7 was? Was this HD?

8 THE WITNESS: No.

9 THE COURT: Would it be a clearer view if there were
10 more pixels?

11 THE WITNESS: I don't think that's the problem. The
12 problem is not so much the pixels, because I believe these were
13 approximately 3 megabyte JPEG files. The problem is --

14 MS. SMITH: The problem is our fault, Your Honor. We
15 PDF'ed the photos when we made our exhibits, so that caused a
16 little bit --

17 THE COURT: You what?

18 MS. SMITH: We converted them into PDF documents when
19 we submitted them to the Court, and that....

20 THE COURT: And that limits the resolution?

21 THE WITNESS: Yes, sir.

22 THE COURT: Go ahead.

23 MS. SMITH: I apologize for that.

24 THE COURT: It's okay.

25 BY MS. SMITH:

1 Q. In your review of the Lopez children's testimony, do you
2 recall any statements in which they described the man they
3 viewed in the van leaning over to the side as you are in this
4 photo?

5 A. Yes, I do. Again, a number of statements from Laura, and
6 likewise from Reynaldo. I think I spent on one page
7 approximately half a page describing the testimony, the many
8 testimonies, that they gave either in interview with the
9 defense counsel or in interview with Detective Clark, and then
10 finally in trial. So it would be difficult for me right now to
11 summarize those inconsistencies without seeing my report, but
12 there were many.

13 Q. Do you recall at all that they ever described a man leaning
14 very far over to the right, as you are in this picture?

15 A. No, I don't.

16 THE COURT: You might want to find -- this may not be
17 it. When you finish up this line of questioning, you may want
18 to find an appropriate place to break for the day.

19 MS. SMITH: We can stop now, Your Honor.

20 THE COURT: Thank you, very much, sir. You may step
21 down.

22 THE WITNESS: Yes, sir.

23 THE COURT: Let me just ask counsel, how are we
24 looking and what do you anticipate for tomorrow?

25 MS. SMITH: So we will finish Dr. Hannon's testimony,

1 and then we are calling Dr. Mary Pat MacKay, who is flying in
2 from Washington, D.C., and then we'll have Phil Esplin.

3 THE COURT: Do you think that will take up the balance
4 of the day?

5 MS. SMITH: We might finish just a little bit early,
6 but I think it will take a good part of the day.

7 THE COURT: That's Thursday, right?

8 MS. SMITH: Yep.

9 THE COURT: Then what about Friday?

10 MS. SMITH: Friday morning we have Stuart James flying
11 in from Florida. And then we have Judge Hazel, who is post
12 conviction counsel.

13 THE COURT: Correct.

14 MS. SMITH: And then Dan Cooper, who is our standard
15 of care expert.

16 THE COURT: Do you think that will take the balance of
17 that day?

18 Okay.

19 Then Monday?

20 MS. SMITH: So Monday is where we hit a little bit of
21 a glitch. I'm going to let --

22 THE COURT: I thought Tuesday was the glitch.

23 MS. SMITH: Chime in here.

24 MR. BRACCIO: She's going to throw me to the wolves.

25 MS. SMITH: You have better information than I do.

1 THE COURT: It's just one wolf.

2 MR. BRACCIO: Fair enough.

3 THE COURT: Go ahead.

4 MR. BRACCIO: Your Honor, we contacted Dr. Howard. He
5 originally was scheduled to testify on Wednesday. He's
6 actually flying in on Tuesday afternoon, so we decided to slot
7 him in Tuesday afternoon. We are still talking about Sonia
8 Pesquiera and whether or not we can finish her testimony
9 Tuesday morning. She's agreed to clear her schedule that
10 morning for her testimony.

11 We may -- I haven't discussed this yet: We may start her
12 Monday afternoon, if she is available. I know she had medical
13 appointments on both Monday and Tuesday, rendering her
14 unavailable. She's agreed to try to move the Tuesday one.
15 I'll get in touch with her immediately after.

16 I think the worst case scenario is probably we go dark
17 Monday, and then we come back and have a full day of testimony
18 Tuesday, and then we're done.

19 THE COURT: When you say, "go dark Monday," are you
20 saying nothing on Monday?

21 MR. BRACCIO: Right. Or we can start Detective
22 Pesquiera, presuming her schedule would allow that.

23 THE COURT: So you're saying that you think right now
24 you've got -- as things stand, you've got testimony that will
25 take us through Wednesday of next week.

1 MS. SMITH: I believe Tuesday, Your Honor.

2 MR. BRACCIO: Tuesday we would be finished.

3 THE COURT: Finished Tuesday?

4 MR. BRACCIO: Yes.

5 THE COURT: Okay. Well, you clearly did some
6 homework, so I appreciate it.

7 Okay. Well, it sounds like for the next several days we're
8 busy, and then we'll talk on Friday about what's going to
9 happen Monday. Does that sound fair?

10 All right. So, 9:00 o'clock tomorrow morning. Anything
11 else we need to discuss tonight?

12 MR. BRACCIO: No, Your Honor.

13 MR. SANDMAN: No, we're good.

14 THE COURT: All right. We'll see you in the morning.

15 (Off the record at 4:54 p.m.)

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C E R T I F I C A T E

I, A. TRACY JAMIESON, do hereby certify that I am
duly appointed and qualified to act as Official Court Reporter
for the United States District Court for the District of
Arizona.

I FURTHER CERTIFY that the foregoing pages constitute
a full, true and accurate transcript of the proceedings
contained herein, held in the above-entitled cause on the date
specified therein, and that said transcript was prepared by me.

Signed in Tucson, Arizona, on the 20th day of
November, 2017.

s/A. Tracy Jamieson
A. Tracy Jamieson, RDR, CRR